

Canada Year Book 1975

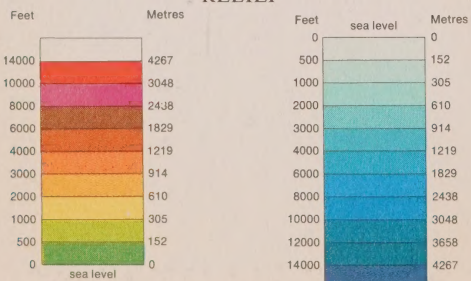


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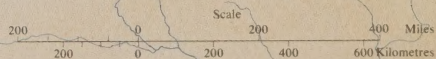
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Canada Year Book

1975

An annual review of economic, social
and political developments in Canada

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and political developments in Canada

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Preface

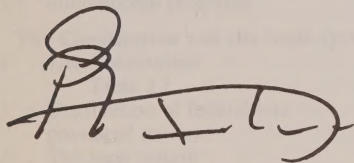
The 1975 edition of the *Canada Year Book* continues the series of comprehensive annual reviews of social, economic and political developments in Canada published since 1905.

This edition maintains the pattern established in the last two editions. Several chapters, however, have been revised. The chapter on government, for example, covers more fully Canada's relations with the United Nations and its specialized institutions; a new section has been added to the education chapter to reflect the increased involvement of governments in the arts, and to describe the role of national museums; the chapter on scientific research has an expanded section describing government programs to aid industrial research. The chapters on energy and telecommunications have been rewritten to reflect developments in these rapidly evolving areas.

While the text and tables in the *Canada Year Book* are based on data available at the time of preparation, more recent and detailed information may be obtained from the sources listed at the end of each chapter.

Publication of a special edition of the *Canada Year Book*, covering 1976 and 1977, and carrying both metric and imperial units, is planned for the fall of 1977. It will serve as a standing reference work and guide as Canada continues its transition to the metric system.

We wish to thank the many outside contributors as well as our colleagues in Statistics Canada who, through their efforts and specialized knowledge, have made this volume possible.

A handwritten signature in dark ink, appearing to read 'P. Kirkham', with a stylized flourish at the end.

Peter Kirkham
Chief Statistician of Canada
Ottawa, December 1975

1996

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Chapter 1

Physiography

1.1 Geography

Canada, occupying the northern half of the North American Continent with the exception of Alaska and Greenland, is the largest country in the Western Hemisphere and the second largest in the world. The lands within its 3,851,809 sq miles of territory are extremely diverse, ranging from the almost semi-tropical areas of the Great Lakes peninsula and the southwest Pacific Coast, wide fertile prairies and great areas of mountains, rocks and lakes to seemingly endless stretches of northern wilderness and arctic tundra. The southernmost point of the country is Middle Island in Lake Erie, at 41°41'N. In a straight line 2,875 miles northward, past the treeline and far into the Arctic, is Cape Columbia on Ellesmere Island, Canada's northernmost point, at 83°07'N. From east to west at the widest point, the straight-line distance is 3,223 miles — from Cape Spear, Nfld., at 52°37'W, to Mount St. Elias, YT, at 141°W.

In position, Canada is situated at the crossroads of contact with the principal powers and some of the most populous areas of the world. In the south, it borders on the United States for a distance of 3,986.8 miles. In the north, the Arctic archipelago penetrates far into the polar basin, making Canada neighbour to northern Europe and the Union of Soviet Socialist Republics. In the east, the salient of Labrador and the island of Newfoundland commands the shortest crossings of the north Atlantic Ocean and links Canada geographically with Britain and France. In the west, the broad arc of land between Vancouver in southern British Columbia and Whitehorse in Yukon Territory provides departure points for crossings of the north Pacific Ocean between continental North America and the Far East. The length of the Yukon-British Columbia border adjoining Alaska is 1,539.8 miles.

In size, Canada's 3,851,809 sq miles may be compared with the area of the USSR at 8,649,539 sq miles, China (including Taiwan) at 3,705,408 sq miles, and Brazil at 3,286,488 sq miles. It is more than 40 times the size of Britain and 18 times the size of France. This immense area, which seems to afford extensive scope for settlement, imposes its own burdens and limitations. Much of the land is mountainous and rocky or is under an arctic climate. The developed portion is probably not more than one third of the total; the occupied farm land is less than 8% and the productive forest land 27% of the total. The population, at approximately 21,569,000 on June 1, 1971, may be compared with 204,800,000 for the United States (1970) and with 95,305,000 for Brazil (1970).

There is no permanent settlement in approximately 89% of the total area of Canada. Only the smallest province, Prince Edward Island, is completely occupied. Large parts of the interior of Nova Scotia, New Brunswick and the Gaspé Peninsula are vacant as is most of the interior of the island of Newfoundland where settlement is confined for the most part to a broken fringe around the coast. On either shore of the St. Lawrence River below Quebec City there is a narrow fringe of settlement, with empty land behind. The continuously settled parts of these maritime areas make up about 1.1% of the area of Canada, and contain 11.7% of its population.

About 57.8% of the population of Canada lives in the area between the American border and a 650-mile east-west line from Quebec City to Sault Ste Marie. Within this area there is continuity of settlement but there are also large unsettled tracts. The block of continuous settlement, whose greatest north-south reach is 270 miles, makes up approximately 2.2% of the area of Canada. The eight largest cities within this block (Montreal, Toronto, Hamilton, Ottawa, London, Windsor, Quebec City, Kitchener) account for 35.8% of the Canadian population.

By far the largest tract of continuous settlement in Canada is in the Prairie provinces, with a southern margin along the American border of some 900 miles. At its easternmost reach in Manitoba the northern margin of continuous settlement is about 100 miles north of the International Boundary; in the west, the northern margin reaches the 55th parallel, about 400 miles north of the boundary. This settled block occupies about 6.2% of the area of Canada and contains 15.4% of its population. Four cities within the area (Edmonton, Calgary, Winnipeg, Regina) contain 7.3% of the national population. North of this block, the Peace River district,

astride the Alberta-British Columbia border, is an agricultural area which reaches the 57th parallel. This continuously settled area covers about 0.3% of the area of Canada, but contains somewhat less than 0.6% of the country's population.

There is continuity of settlement throughout the southern half of British Columbia, but the continuity is in the form of narrow interconnecting strips following mountain valleys and coastal plains. Between the valleys large areas are empty of permanent settlement. The settled strips occupy about 0.7% of the area of Canada and contain 9.5% of its population. More than 4.0% of the national population is located in the Lower Fraser Valley, principally in the Vancouver metropolitan area.

North of the areas already described there are a number of disjunct settlements, the most notable of which, in regard to size, are in Ontario and Quebec in a band confined by the 47th and 50th parallels. From east to west these are: the Lac St-Jean Lowland some 100 miles north of Quebec City, the Clay Belts astride the Ontario-Quebec border, the Lakehead, and the Dryden and Fort Frances areas in Ontario near the Manitoba boundary. Collectively these blocks of continuous settlement account for about 0.4% of the area of Canada, and approximately 3.6% of its population.

Outside these urban-rural blocks of settlement there are numerous settlements related to mining, forest industries, transportation, administration, defence, hunting, and fishing but with little or no agricultural base. The largest of these isolated settlements, with their 1971 populations, are as follows: Thompson, Man., 19,001; Whitehorse, YT, 11,217; Labrador City and Wabush, Labrador, 11,009; Kenora, Ont., 10,952; Chibougamau, Que., 9,701; Flin Flon, Man. and Sask., 9,344; Fort McMurray, Alta., 6,847; Yellowknife, NWT, 6,122; The Pas, Man., 6,062; Atikokan, Ont., 6,007.

The geographical knowledge of Canada is reasonably complete considering its size and its large areas of difficult access. The whole country has been surveyed and mapped at a scale of 1:250,000, which is very close to four miles to the inch, allowing a detailed depiction of relief, river systems, transportation facilities, forest cover and centres of population. Comparisons of different features and areas can be made, as all map sheets of the series are drawn to the same specifications. In addition, all settled areas and regions of northern development have been mapped at larger scales, in particular at 1:50,000 or approximately one and a quarter inches to the mile, and vertical air photographs showing still more details of the terrain are available for the whole country, varying in scale from about one inch to the mile in the Arctic to four inches, or larger, to the mile in settled areas.

Politically, Canada is divided into 10 provinces and two territories. Each province is sovereign in its own sphere and administers its own natural resources and upon such resources, as related to topography, position and climate, is based the economy of the province. The resources (except for game) of the Yukon Territory and Northwest Territories, because of their remoteness, the great extent and the meagre and scattered populations of these areas, are administered by the federal government. The approximate land and freshwater areas of the provinces and territories are given in Table 1.1.

The Canadian Permanent Committee on Geographical Names, administered by the Department of Energy, Mines and Resources, deals with all questions of geographical nomenclature affecting Canada and undertakes research and investigation into the origin and usage of geographical names. The Committee is composed of representatives of the federal mapping agencies and other federal agencies concerned with nomenclature and a representative appointed by each province.

1.1.1 Mountains and other heights

The great Cordilleran mountain system is Canada's most impressive physical feature. Many peaks in the various ranges embodied in the Canadian Cordillera are over 15,000 ft in height, and a total of 576.4 sq miles of territory lies above the 10,000-ft mark. Mount Logan in the St. Elias Mountains of the Yukon Territory, which rises 19,850 ft above sea level, is the highest point in Canada.

The highest points in each province are: Newfoundland, 5,232 ft; Prince Edward Island, 465 ft; Nova Scotia, 1,747 ft; New Brunswick, 2,690 ft; Quebec, 5,210 ft; Ontario, 2,275 ft; Manitoba, 2,729 ft; Saskatchewan, 4,567 ft; Alberta, 12,294 ft; British Columbia, 15,300 ft; Yukon Territory, 19,850 ft; and the Northwest Territories, 9,062 ft.

Rossland, BC, is at the highest elevation, 3,465 ft, of any city in Canada and Chilco Lake, with an area of 75 sq miles, is the highest major lake at 3,842 ft. Heights of the more important Canadian mountains and other elevations are given in Table 1.2.

1.1.2 Inland waters

Every year about 8,000,000 million tons of water fall on Canada in the form of rain and snow. Much of it is evaporated but a large amount drains back to the oceans as surface runoff, forming rivers and lakes along its route. This surface water is the dominant feature of the Canadian environment. It has been estimated that about 7.6% of Canada's total area is covered by fresh water (Table 1.1). There are probably more lakes here than in any other country in the world — so many that they have never been counted. The total area of fresh water is given as 291,571 sq miles but this figure does not include most of the small ponds, non-permanent lakes and sloughs, seasonally flooded areas or large areas of marsh and wet tundra. As much as one seventh of all the fresh, liquid, surface water in the world is contained within Canada's boundaries.

A large portion of this water is contained in the Great Lakes. Slightly more than 37% of their total area is in Canada (Table 1.3). These lakes, which rank with the largest bodies of fresh water in the world, are large enough to have measurable, although very slight, tides. Other large lakes in Canada, ranging in area from 12,100 to 9,200 sq miles, are Great Bear Lake, Great Slave Lake and Lake Winnipeg. Apart from these, countless smaller lakes are scattered over the major portion of Canada lying within the Canadian Shield. For example, in an area of 6,094 sq miles, accurately mapped, south and east of Lake Winnipeg there are 3,000 lakes; in an area of 5,294 sq miles southwest of Reindeer Lake in Saskatchewan there are 7,500 lakes. The size and elevation of Canada's lakes over 150 sq miles in area are listed in Table 1.4.

Lake storage is very valuable — it represents water that can be drawn upon in time of drought to be replaced in time of plenty. Lakes are natural regulators of river flow. However, the true measure of a country's water wealth is the amount of water that can be depended upon to be replaced each year — the amount that remains after evaporation has been subtracted from precipitation. This is the amount that flows in its rivers. Here, too, Canada is very fortunate. The combined mean annual flow of all its rivers has been estimated at 3.5 million cu ft per second — about 9% of the total flow of all the rivers of the world. Set against a population of less than 1% of the world total, this constitutes a very generous endowment of fresh water.

It is understandable that Canada's history of settlement and industrial development has been influenced by its great rivers. The country's first industry, the fur trade, flourished because of the ready access to the interior provided by the St. Lawrence River, the Great Lakes and their tributary streams and the many other great and small waterways. Early exploration and settlement depended on this same natural means of access. The plentiful water supplies of the flat and fertile plains of southern Ontario and Quebec attracted an industrious farming people. The river-borne transportation of lumber and later the power of water-driven turbines were vital factors in the building of the country's industrial base. Today, more than ever, water is the key to Canada's development, supplying the renewable energy required for industrial growth, providing easy and relatively cheap transport for bulk raw materials and playing a vital part in the processing of those materials.

Table 1.5 lists the principal rivers of Canada and their tributaries. The tributaries and sub-tributaries are indicated by indentation of names; thus, the Ottawa and other rivers are shown as tributary to the St. Lawrence, and the Gatineau and other rivers as tributary to the Ottawa.

The accompanying map shows the major drainage basins of Canada. Probably the most important is the Atlantic drainage basin, being dominated by the Great Lakes–St. Lawrence system which drains an area of approximately 678,000 sq miles and forms an unequalled navigable inland waterway through a region rich in natural and industrial resources. From the head of Lake Superior to Belle Isle at the entrance of the Gulf of St. Lawrence the distance is 2,280 miles. The entire drainage area to the north of the St. Lawrence and the Great Lakes is occupied by the southern fringe of the Canadian Shield, a rugged, rocky plateau from which flow many tributary rivers. These rivers, as well as the St. Lawrence itself, provide much of the electric power necessary to operate the great industries of the area. South of the St. Lawrence,



the smaller rivers are important locally. The Saint John, for instance, drains a fertile area and provides most of New Brunswick's hydro power.

The Hudson Bay drainage basin is the largest in area and its main river is the Nelson. The Winnipeg River, a tributary of the Nelson, is completely developed for hydro-electric power but development of the Nelson itself is just beginning. The Saskatchewan River, tributary to the Nelson, drains the great agricultural region of the mid-west and is now an important source of water for irrigation and hydro-electric power.

The Arctic drainage basin is dominated by the Mackenzie, one of the world's longest rivers. It flows 2,635 miles from the head of the Finlay River to the Arctic Ocean and drains an area of approximately 700,000 sq miles in the three westernmost provinces and the two territories. Except for a 16-mile portage in Alberta, barge navigation is possible from Waterways on the Athabasca River to the mouth of the Mackenzie, a distance of 1,700 miles.

The rivers of the Pacific basin rise in the mountains of the Cordilleran Region and flow to the Pacific Ocean over tortuous, precipitous courses, rushing through steep canyons and tumbling over innumerable falls and rapids. They provide power for large hydro-electric developments and in season swarm with salmon returning inland to their spawning grounds. The Fraser River rises in the Rocky Mountains and, toward its mouth, flows through a rich agricultural area. The Columbia is an international river which has a total fall of 2,650 ft during its course and has thus a tremendous power potential. Although a considerable portion of the United States potential has been developed, the Canadian portion of the basin has remained relatively untouched until recent years when three large reservoirs were constructed in Canada under the terms of the Columbia River Treaty. These reservoirs now make it possible for British Columbia to develop up to 4,000 Mw of hydro-electric generating capacity in the Columbia basin in Canada. The Yukon River is also an international river but, although the largest on the Pacific slope, it is as yet of relatively little economic importance.

Utilization of inland water. Over 43% of all water withdrawn in Canada (excluding withdrawals associated with hydro projects) is for one end use, condenser cooling in thermal steam-electric plants. However, about 99% of this water is returned for re-use. Municipal water use, including small industrial processors served by the municipal supply systems of Canada, accounts for some 10.5% of current daily water withdrawals. On average, approximately 75% of the water pumped into the system is discharged as storm and sanitary sewage containing waste materials.

Other industrial users, manufacturing and mining firms, account for 38% of the total withdrawals of water in Canada and about 10% of that intake is consumed or lost. Discharged water is frequently returned to source in a highly polluted condition and may be unfit for most uses downstream. Agriculture requires 7.7% of the nation's total withdrawals annually for irrigation, stockwatering and rural domestic use and relatively little is returned to the water supply source.

Hydro-electric power generation utilizes the kinetic energy of falling water to produce energy. During the process, the water is not consumed except for evaporation losses from the surface of reservoirs. However, flooding of land for storage and interference with natural flow may cause serious adverse effects.

1.1.3 Coastal waters

The coastline of Canada, measuring over 150,000 miles, is one of the longest of any country of the world. It comprises the following estimated mileages (statute) — Mainland: Atlantic 9,843; Pacific 4,363; Hudson Strait 2,643; Hudson Bay 7,623; Arctic 11,884; total 36,356 miles. Islands: Atlantic 18,176; Pacific 11,622; Hudson Strait 5,340; Hudson Bay 9,181; Northwest Territories south of Arctic Circle 13,800; Arctic 57,014; total 115,133 miles.

A comprehensive description of the coastal waters of Canada would require information from sciences such as oceanography, marine biology and meteorology. However, the basic factor in any study of the oceanic-continental margin is the physical relief of the sea floor and the scope of the information presented here is therefore restricted to this and a few salient features of the Atlantic, Pacific and Arctic marginal seas surrounding Canada.

Atlantic. Along this coastal area, the sea has inundated valleys and lower parts of the Appalachian Mountains as well as those of the Canadian Shield. The submerged continental shelf, protruding seaward from the shore, effects the transition from continental to oceanic conditions. This shelf is distinguished by great width and diversity of relief. From the coast of Nova Scotia its width varies from 60 to 100 miles, from Newfoundland 100 to 280 miles (at the entrance of Hudson Strait), and northward it merges with that of the Arctic Ocean. The outer edge of the shelf varies in depth from 100 to 200 fathoms before the shelf gives way to the declivity leading to abyssal depths. The over-all gradient of the Atlantic continental shelf is slight but the whole area is studded with shoals, plateaus, banks, ridges and islands and the coasts of Nova Scotia and Newfoundland are rugged and fringed with islets and shoals. Off Nova Scotia, the 40-fathom line lies at an average of 12 miles from the shore and constitutes the danger line for coastal shipping. The whole floor of the marginal sea appears to be traversed by channels and gullies cutting well into the shelf.

The topography of much of the Atlantic marginal sea floor has been shaped in the past by processes of glacial erosion and deposition. Large areas, however, are in a constant state of change due to continuous marine deposition of materials eroded by rivers, wave action, wind and ice. Navigation charts of such areas must therefore be continuously revised.

Hudson Bay and Hudson Strait bite deeply into the continent. Hudson Bay is an inland sea 317,501 sq miles in area having an average depth of about 70 fathoms; the greatest charted depth in the centre of the Bay is 141 fathoms. Hudson Strait separates Baffin Island from the continental coast and connects Hudson Bay with the Atlantic Ocean. It is 430 miles long and from 37 to 120 miles wide and its greatest charted depth of 481 fathoms is close inside the Atlantic entrance. Great irregularities of the sea floor are indicated but, except in inshore waters, few navigational hazards have been located.

Pacific. The marginal sea of the Pacific differs strikingly from the other marine zones of Canada. The hydrography of British Columbia is characterized by bold, abrupt relief — a repetition of the mountainous landscape. Numerous inlets penetrate the mountainous coasts for distances of 50 to 75 miles. They are usually a mile or two in width and of considerable

depth, with steep canyon-like sides. From the islet-strewn coast, the continental shelf extends from 50 to 100 sea miles to its oceanward limit where depths of about 200 fathoms are found. There the sea floor drops rapidly to the Pacific deeps, parts of the western slopes of Vancouver Island and the Queen Charlotte Islands lying only four miles and one mile, respectively, from the edge of the declivity. These great detached land masses are the dominant features of the Pacific marginal sea. As is to be expected in a region so irregular in hydrographic relief, shoals and pinnacle rocks are numerous, necessitating cautious navigation.

Arctic. The submerged plateau extending from the northern coast of North America is a major part of the great continental shelf surrounding the Arctic Ocean, on which lie all the Arctic islands of Canada, Greenland, and most of the Arctic islands of Europe and Asia. This shelf is most uniformly developed north of Siberia where it is about 500 miles wide; north of North America it surrounds the western islands of the archipelago and extends 50 to 300 miles seaward from the outermost islands.

The floor of the submerged part of this continental margin is nearly flat to gently undulating, with isolated rises or hollows. Most of it has an average slope seaward of about one half a degree, with an abrupt break at the outer edge to the continental slope whose declivity is commonly six degrees or more. From the Alaskan border eastward to the mouth of the Mackenzie River the shelf is shallow and continuous with the coastal plain on the mainland; the outer edge of the shelf lies at a depth of about 35 fathoms and about 40 nautical miles off shore. This shelf is continuous with that north of Alaska and Siberia. Near the western edge of the Mackenzie River delta, the continental shelf is indented by a deep valley, the Herschel Sea Canyon, whose head comes within 15 miles of the coast. Between Herschel Sea Canyon and Amundsen Gulf, the typical features of the continental shelf are replaced by the submerged portion of the Mackenzie River delta, which forms a great pock-marked under-sea plain, most of it less than 30 fathoms deep, up to 75 nautical miles wide and 250 miles long.

North and east of the submerged portion of the Mackenzie River delta, the continental shelf, while typical in form, is more deeply submerged than that off the mainland and Alaska. Its gently undulating surface is, for the most part, 200 fathoms or more below sea level, and the well-defined, nearly straight continental shoulder is for the most part over 300 fathoms deep, giving way to the smooth continental slope which extends without significant interruption to the floor of the abyssal Canada Basin at a depth of about 2,000 fathoms. The deeply submerged continental shelf extends along the entire west coast of the Canadian Arctic archipelago from Banks Island to Greenland. All of the major channels between the islands — Amundsen Gulf, M'Clure Strait, Prince Gustav Adolf Sea, Peary Channel, Sverdrup Channel and Nansen Sound — have flattish floors at about the same depth as the shelf and appear to enter it "at grade", although there are a few local irregularities that may be the result of glacial action. No deep indentations or canyons are known to cut the continental slope or continental shelf off the archipelago, except one sinuous canyon that heads off Robeson Channel at the northeastern end, close to the coast of Greenland. The submerged sides of the channels of the archipelago, and the slopes from the shoreline at the western edge of the islands to the inner edge of the deeply submerged shelf, are in many places marked by a series of steps or terraces.

The continental shelf bordering the Arctic Ocean as well as the adjacent mainland, particularly near the delta of the Mackenzie River, and the islands of the archipelago have been subjected to increasingly intensive scientific study and mineral resource exploration during the past 15 years. Co-ordinated and continuing programs of research and surveys have studied the bedrock geology, the development of the terrain, the sediments on the sea floor and the nature and history of the ice caps. Gravity, seismic, aeromagnetic, geomagnetic and geothermal investigations have obtained information on the physical characteristics and structure of the rocks beneath the surface, and the nature and stability of the crust underlying the islands, the continental shelf and the continental slope. A complementary program of geodetic, topographic and hydrographic surveys has provided the necessary background maps and charts, and information about both terrestrial and marine physiography for these studies. Along with the technical surveys and investigations in the physical sciences, there have been less intensive but very relevant studies of the biology of the Arctic lands and oceans. The result of all these activities is that a great deal of reliable scientific information in a wide range of subjects is now available for an area about which very little was known two decades ago.

1.1.4 Islands

The largest islands of Canada are in the North and all experience an arctic climate. The northern group extends from the islands in James Bay to Ellesmere Island which reaches 83°07'N. Those in the District of Franklin lie north of the mainland of Canada and are generally referred to as the Canadian Arctic archipelago; those in the extreme north — lying north of the M'Clure Strait–Viscount Melville Sound–Barrow Strait–Lancaster Sound water passage—are known as the Queen Elizabeth Islands.

On the west coast, Vancouver Island and the Queen Charlotte Islands are the largest and the most important but the coastal waters are studded with many small rocky islands.

The island of Newfoundland forming part of the province of Newfoundland, the province of Prince Edward Island, Cape Breton Island forming part of the province of Nova Scotia, Grand Manan and Campobello islands forming part of the province of New Brunswick, and Anticosti Island and the Magdalen group included in the province of Quebec are the largest islands off the east coast.

Notable islands of the inland waters include Manitoulin Island (1,068 sq miles in area) lying in Lake Huron, the so-called Thirty Thousand Islands of Georgian Bay and the Thousand Islands in the outlet from Lake Ontario into the St. Lawrence River.

The areas of principal islands by region are given in Table 1.6.

1.1.5 Surveying and mapping

The needs for maps and surveys of Canada are met mainly by the Department of Energy, Mines and Resources. They compile topographical, geological and aeromagnetic maps, aeronautical charts and specialized maps showing electoral district boundaries, land use and other features. Some types of maps and surveys are also produced by provincial and private agencies. In the field of geodesy, the Geodetic Survey maintains a network of horizontal and vertical control points across Canada to establish at least one horizontal and vertical control point within 10 miles of any point in established and economically important areas. The Topographical Survey has completed the mapping of Canada at the scale of four miles to one inch; mapping at a scale of one mile to one and a quarter inches is proceeding. There are 800 maps available on the relatively large scale of one mile to two and a half inches, covering all major cities and their suburbs. Photomaps, a new map-type made possible by advances in air photography and photogrammetry, are now available. The Legal Surveys Division is responsible for the technical management of legal surveys of land under federal jurisdiction, such as the northern territories, national parks and Indian reserves. It also executes such surveys on behalf of administering departments, collaborates in the demarcation of provincial boundaries, prepares descriptions of electoral districts and generally provides land-surveying services to other departments.

The Surveys and Mapping Branch is the major agency in Canada for the preparation of aeronautical charts showing airports, airways and radio and other aids necessary for air navigation. As a service to map-makers, prospectors, engineers, foresters, town planners and others interested in that field, the Department maintains a National Air Photo Library in Ottawa containing a collection of all air photographs taken by or for the federal government. The Library is also responsible for the storage, documentation and handling of airborne remote-sensing photography and Earth Resources Technology Satellite imagery. Geological surveys provide an inventory of the potential resources of Canada, aid in the discovery of mineral deposits, and assist in other aspects of the national economy influenced by geological factors. Large reconnaissance projects are mounted in the northern regions of the country, and more detailed investigations in the better-known southern areas. Geological maps are published either separately or, more commonly, as part of scientific papers. Geophysical surveys result in maps showing such features as variations in terrestrial magnetism, gravity and seismology. The Geological Survey outlines local magnetic variations indicative of mineral deposits, while the Earth Physics Branch maps the earth's total magnetic field. Seismic observatories throughout Canada compile and update an earthquake zoning map of Canada. A gravity map of Canada is also available.

1.2 Geology

Canada is composed of some 17 geological provinces that may be grouped under four main categories — continental shelf, platform, orogen and shield. The geologically youngest



provinces, the Atlantic, Pacific and Arctic continental shelves are made up of little-deformed sediments and volcanics, mainly of Mesozoic and Cenozoic age, which have accumulated and are still accumulating along the margins of the present continental mass. The St. Lawrence, Interior, Arctic and Hudson platforms are formed of thick flat-lying Phanerozoic strata which cover large parts of the crystalline basement rocks of the continental interior, the extension of the Canadian Shield. The Appalachian, Cordilleran and Innuitian orogens are mountain belts of deformed and metamorphosed sedimentary and volcanic rocks mainly Phanerozoic and Proterozoic age, intruded by granitic plutons. They were produced during the various Phanerozoic orogenies 50 to 500 million years ago. Of the seven provinces comprising the Precambrian Canadian Shield, the Grenville, Churchill, Southern and Bear embrace the orogenic belts that were produced during the Proterozoic orogenies, 900 to 1,800 million years ago. The remaining three, the Superior, Slave and Nutak provinces, were deformed during the Archean Eon, and include the oldest continental crust known in Canada, 2,500 to 3,000 million years old. The Precambrian orogenic belts have many features in common with those of Phanerozoic age but are so deeply eroded that the mountainous parts have been reduced to plains or lowlands and in many places the basement crystalline rocks upon which the sediments and volcanics initially accumulated are now exposed.

The land and freshwater area of Canada is 3,852,000 sq miles, but unique among the nations of the world, Canada also includes within this area some 858,000 sq miles of marine waters. The rocks beneath have geological features akin to the adjacent regions on-shore. In addition, the submarine area of the bordering continental shelves is about 523,000 sq miles and of the continental slopes, 563,000 sq miles. In common with other maritime nations, Canada exercises sovereign rights over all these adjacent regions under the sea for the purpose of exploring and exploiting their natural resources, and so, within the confines of the continental slopes, Canada embraces 5,526,000 sq miles (15,000,000 sq km), about 3% of the surface of the globe.

For a full description of Canada's geology see the *1973 Canada Year Book* pp 8-14.

1.3 Climate and time zones

1.3.1 Climate

Climate is primarily dependent upon the radiative exchanges between the sun, the atmosphere and the surface of the earth. In addition, the regional climates of Canada are controlled, to a significant extent, by the geography of North America and by the general environment of air from west to east across the continent. The climate of the Pacific coast is cool and fairly dry in summer but mild, cloudy and wet in winter. Interior British Columbia has climates which vary more with altitude than with latitude: wet windward mountain slopes where there are heavy snows in winter, dry "rainshadow" valleys which are very hot in summer, and marked day to night temperature contrasts on the high plateaus. A vast area of interior Canada, extending westward from the Great Lakes to the Rocky Mountains, experiences a truly continental-type climate — bitterly cold winters, short but warm summers and scanty precipitation. The southern portions of Ontario and Quebec experience a humid climate with cold winters, hot summers and generally ample precipitation throughout the year. Similarly the four Atlantic provinces have a humid continental-type climate although in the immediate coastal areas there is a marked maritime effect. On the northern islands, along the Arctic coast and around Hudson Bay true arctic conditions persist, with long frigid winters as only a few months have temperatures averaging above freezing each year. The precipitation is quite light in this tundra area north of the treeline. Between the arctic and southern climates a vast band of Boreal Canada from the Yukon Territory eastward to Labrador has a transitional type climate with bitter long winters but appreciable summer periods. Precipitation is light in the west, but heavier falls occur in the Ungava Peninsula. Detailed reports concerning the climates of Canada and of the various regions are available from the Atmospheric Environment Service of the federal Department of the Environment.

Climatic data. Temperature and precipitation data for typical stations in various Canadian districts are shown in Table 1.7. Additional data from hundreds of stations and data dealing with other climatological elements are available in the statistical and historical climatic data publications of the Atmospheric Environment Service, Department of the Environment. Definitions, methods of observation, the instrumentation used and other information are also to be found in these publications.

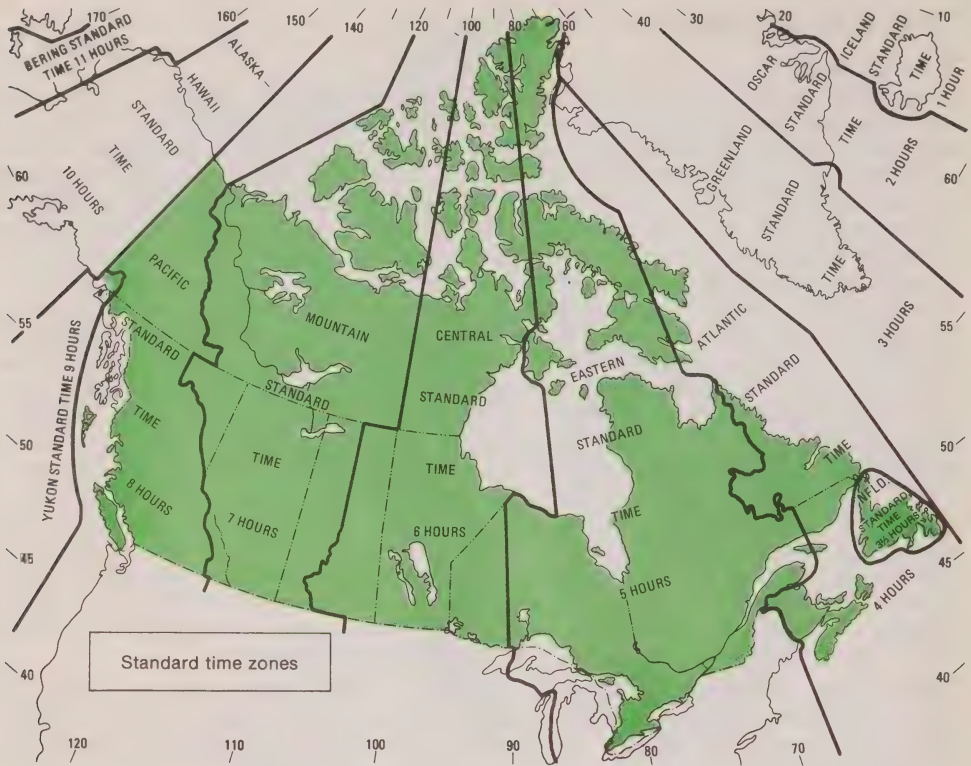
1.3.2 Standard time and time zones

The rotation of the earth on its axis was considered at one time to be entirely uniform and the unit of time, which is the second, was defined as $1/86400$ of the mean solar day. Improvements in clocks and in the methods of making astronomical observations demonstrated conclusively that there are irregularities in earth rotation too large to be neglected. So, in 1956 the International Committee on Weights and Measures defined the second in terms of the annual motion of the earth about the sun, called ephemeris time. In 1957 the first cesium atomic clock was calibrated with respect to ephemeris time, but not until 1967 was the cesium second adopted as the international standard. The second today is defined as the duration of 9,192,631,770 periods of the radiation corresponding to a transition of the cesium atom.

Based on atomic clocks, Canada's time is established by the National Research Council with a precision of one ten-millionth of a second per day, and co-ordination with other countries is maintained to the same precision through the Bureau international de l'Heure in Paris. Irregularities in the rotation of the earth give rise to a difference between mean solar time and atomic time, and a leap second is introduced to ensure that this difference, called DUT1, does not exceed 0.8 seconds. At present DUT1 is decreasing by about one tenth of a second per month, and positive leap seconds were necessary on June 30 and December 31, 1972, December 31, 1973, and December 31, 1974.

A continuous broadcast of Canadian time is made on station CHU, Ottawa (3330 kHz, 7335 kHz, 14670 kHz), with a bilingual voice announcement each minute, and with a split pulse code to give the value of DUT1. Once a day the time signals are broadcast across Canada on the CBC networks.

Standard Time, which was adopted at a World Conference held at Washington, DC, in 1884, sets the number of time zones in the world at 24, each zone ideally extending over one



twenty-fourth of the surface of the earth and including all the territory between two meridians 15° of longitude apart. In practice, the zone boundaries are quite irregular for geographic and political reasons. Universal Time (UT) is the time of the zone centred on the zero meridian through Greenwich. Each of the other time zones is a definite number of hours ahead of or behind UT to a total of 12 hours, at which limit the international date-line runs roughly north-south through the mid-Pacific.

Canada has six time zones, the most easterly being Newfoundland Standard Time, three hours and 30 minutes behind UT, and the most westerly Pacific Standard Time, eight hours behind UT. In between, from east to west, the remaining zones are called Atlantic, Eastern, Central and Mountain. On October 28, 1973, the nine hour Western Yukon Time Zone was eliminated by order of the Yukon Territorial Council, placing the entire Yukon eight hours behind UT.

Legal authority for the time zones. Time in Canada has been considered a matter of provincial rather than federal jurisdiction. Each of the provinces and territories has enacted laws governing the standard time to be used within its boundaries. These laws determine the location of the time zone boundaries. Lines of communication, however, have sometimes caused communities near the boundary of a time zone to adopt the time of the adjacent zone, and in most cases these changes are acknowledged by amendments to provincial legislation. During the two World Wars, there were federal enactments concerning time but these were of temporary duration. In 1941 the time determined at the Dominion Observatory was designated as official time for Dominion official purposes. On April 1, 1970, this responsibility was transferred to the National Research Council.

Daylight saving time. Although daylight saving time had been urged in many quarters before World War I, its first use in Canada came as a federal war measure in 1918. Today most of the provinces have legislation controlling the provincial or municipal adoption (or rejection) of daylight saving time; in the other provinces the authority is left to the municipalities. By

general agreement, daylight saving time, where it is observed, is in force for six months from the last Sunday in April until the last Sunday in October.

1.4 Public land

The total area of Canada and the areas of the individual provinces and territories are classified by tenure in Table 1.8. All lands, with the exception of those privately owned or in process of alienation, are Crown lands under the jurisdiction of either the federal or the provincial governments.

Federal public land. Public lands under the administration of the federal government comprise lands in the Northwest Territories including the Arctic archipelago and the islands in Hudson Strait, Hudson Bay, James Bay and Ungava Bay, lands in the Yukon Territory, ordnance and admiralty lands, national parks and national historic parks and sites, forest experiment stations, experimental farms, Indian reserves and, in general, all public lands held by the several departments of the federal government for various purposes connected with federal administration. These lands are administered under the Territorial Lands Act (RSC 1970, c.T-6) and the Public Lands Grants Act (RSC 1970, c.P-29).

The largest areas under federal jurisdiction are in the Northwest Territories and the Yukon Territory where only 93 sq miles of a total area of 1,511,979 sq miles are privately owned and 1,472 sq miles are under the administration of the territorial governments.

Provincial and territorial public land. Public lands of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia (except the Railway belt and Peace River block) have been administered since Confederation by the provincial governments. In 1930, the federal government transferred the unalienated portions of the natural resources of Manitoba, Saskatchewan and Alberta and of sections of British Columbia to the respective governments, and all unalienated lands in Newfoundland, except those administered by the federal government, became provincial public lands under the Terms of Union on March 31, 1949. All land in Prince Edward Island has been alienated except 133 sq miles under federal or provincial administration.

The transfer by the federal government of significant areas of land within and immediately surrounding established communities in the Northwest Territories and the Yukon Territory to the administration of the respective territorial governments began in September 1970. In that year, four such transfers were completed, three in the Northwest Territories and one in the Yukon, for a total of 665 sq miles. Since then 15 transfers were completed in the following areas: Yukon Territory: Faro (91 sq miles), Beaver Creek (2 sq miles), Mayo (4 sq miles), Teslin (1 sq mile), Carmacks (12 sq miles); Northwest Territories: Frobisher Bay (51 sq miles), Aklavik (8 sq miles), Fort Simpson (140 sq miles), Fort Smith (22 sq miles), Fort Providence (81 sq miles), Hay River-Enterprise (142 sq miles), Norman Wells (175 sq miles), Fort McPherson (31 sq miles), Fort Franklin (25 sq miles), Fort Good Hope (22 sq miles).

1.4.1 Federal parks

Parks Canada, a program of the Department of Indian Affairs and Northern Development, includes National Parks, National Historic Parks and Sites, historic waterways, wild rivers and byways. Joint provincial-federal co-operation has resulted in a nation-wide network of parks, historic parks and sites, historic waterways and land trails, and scenic parkways. Parks Canada has its headquarters in Ottawa but operational responsibility for the program rests with the five regional offices: the Atlantic regional office in Halifax, the Quebec regional office in Quebec City, the Ontario regional office in Cornwall, the Prairie regional office in Winnipeg and the Western regional office in Calgary.

National historic parks and sites. The National Historic Parks and Sites of Canada commemorate the persons, places and events which have been declared to be of major significance in the historical development of Canada. The passage of the Dominion Forest Reserves and Parks Act in 1911 was a significant step in the federal government's commemorative program. This Act created within the Department of the Interior a Dominion Parks Board to administer national and historic parks. In 1917, Fort Anne at Annapolis Royal, NS, was transferred from the Department of the Militia and declared Canada's first National Park of historic significance.

Upon the recommendation of the Commissioner of the Dominion Parks Board, a seven-member Historic Sites and Monuments Board of Canada was formed to advise the Minister on the matter of sites of national historical interest. The Board met for the first time at Ottawa on October 28, 1919. The second National Historic Park was established in 1927 and by 1950 there were nine such parks, receiving over 150,000 visitors annually.

The National Parks Act of 1930 provided that the Governor in Council may set apart any land, the title to which is vested in Her Majesty, as a National Historic Park to commemorate an historic event of national importance, or preserve any historic landmark or any object of historic, prehistoric or scientific interest of national importance. Until 1953 the Historic Sites and Monuments Board operated under Order in Council authority and no provision was made for Parliament's formal review of the Board's decisions. The Historic Sites and Monuments Act of 1953 provided the statutory base for the operation of the Board and defined the role of the Board as adviser to the Minister whose statutory responsibility was to develop and implement a national program of commemorating historic sites. Further legislation was enacted in 1955 and 1959 to amend and broaden the scope of the original Act. The Canadian Historic Sites Division, now the National Historic Parks and Sites Branch, was created within the Department of Northern Affairs and National Resources in 1955 to develop, interpret, operate and maintain historic parks and sites and to act as secretariat for the Board.

A policy statement on national historic sites in 1968 stated that for commemoration, a site or structure must be closely associated with a person, place or event of national historical importance, or it must illustrate the cultural, social, political, economic or military patterns of history or of a prehistoric people or archaeological discovery, or be valuable as an example of architecture. The statement also included guidelines for the provision of visitor services, interpretative programs and the promotion of information to the public at large. Standards for the preservation, restoration and reconstruction of structures were established which stressed authenticity in the materials used and in the furnishings and artifacts. The policy also recognized the need for a comprehensive program to give full thematic and geographical representation and to establish a long-range planning program to facilitate the development of parks based on such themes as exploration and social, cultural, economic and prehistoric events.

The Historic Sites and Monuments Act provides for a Board of 15 members: two representatives each from Ontario and Quebec and one from each of the eight other provinces appointed by the Governor in Council, the Dominion Archivist, one representative from the National Museums of Canada and one from the Department of Indian Affairs and Northern Development as *ex officio* members. The members are generally historians of distinction. The Board may recommend that sites, buildings and other structures of national importance be developed as National Historic Parks or Historic Sites or that commemoration be carried out by the erection of Historic Sites and Monuments Board of Canada plaques, or in exceptional circumstances, of distinctive monuments. Suggestions for the establishment of historic sites and parks come from many sources — the general public, members of Parliament, historical societies and other groups, department staff and members of the Board themselves. Before a site is referred to the Board for consideration, a background paper is prepared by the National Historic Parks and Sites Branch research staff. The Board then determines the significance of the site and makes its recommendation, which may be either favourable or unfavourable, to the Minister. After approval has been granted to a project, a development plan is prepared.

Since its establishment, the National Historic Parks and Sites Branch, on the recommendation of the Board, has been instrumental in the creation of some 80 historic parks and major sites of which over 40 are operational and in the commemoration with plaques of some 650 persons and events of national (as opposed to local or regional) significance. Negotiations are being conducted with certain provinces for the acquisition of other sites already declared to be of major national historical significance. The Department has also entered into cost-sharing agreements with provincial and municipal governments and with incorporated non-profit societies for the acquisition and restoration of more than 38 architecturally or historically significant buildings on the understanding that the other party will pay the balance of the acquisition and restoration costs and will maintain the buildings in perpetuity. A number of monuments of distinctive nature and character which commemorate people and events significant in the nation's history are maintained by the National Historic Parks and Sites Branch.

Location, year established and characteristics of national historic parks and sites were carried in the 1972 and 1973 editions of the *Canada Year Book*. Many more are in process of restoration or development and full details may be obtained from the Department of Indian Affairs and Northern Development's publication *Canada's national historic parks/sites*.

Another undertaking of the Branch is the Canadian Inventory of Historic Building. This Inventory, begun in 1970, is a computerized program to survey, analyze and categorize old buildings in Canada. So far the exteriors of more than 150,000 buildings have been surveyed and, of these, almost all have been entered in the computer and indexed; interiors of approximately 1,200 structures selected from these have been surveyed by the CIHB.

An important step toward the preservation of the nation's historic resources was taken in 1972 with the establishment of Heritage Canada, an independent organization concerned with the conservation of buildings, sites and natural and scenic areas of importance to the country's heritage. It received an initial federal capital endowment of \$12 million and the interest on this fund is used to further its work. Heritage Canada enlists the support of the general public and of foundations and corporations; membership is open to anyone.

National parks. Canada's National Parks are the evidence of the federal government's efforts to preserve natural areas of outstanding scenic and biological interest for the benefit of the public. The national park concept, which began with the establishment of Yellowstone National Park in the United States in 1872, was soon afterwards applied in Canada. In 1885, the Canadian government reserved from private ownership the mineral hot springs of Sulphur Mountain in what is now Banff National Park. Two years later, this 10-sq mile reserve was extended to 260 sq miles and named Rocky Mountain Park, the first federal park in Canada. Two land reserves in southern British Columbia — Yoho and Glacier — were made by the federal government in 1886, a reserve of 54 sq miles in the Waterton Lakes area of southern Alberta in 1895, and an area of 5,000 sq miles around Jasper, Alta., in 1907. These four reserves, all in the western mountain ranges, together with Rocky Mountain Park, formed the nucleus of the national park system after the Dominion Forest Reserves and Parks Act was passed by Parliament in May 1911. A National Parks Branch was created that year by the federal government to protect, administer and develop the parks.

By 1930, nine more national parks had been established. Three of these were in Ontario and consisted of federally owned Crown land or land held in trust for Indians: St. Lawrence Islands National Park, Point Pelee National Park and Georgian Bay Islands National Park. One in Saskatchewan, Prince Albert National Park, and one in Manitoba, Riding Mountain National Park, were former federal forest reserves. Elk Island National Park near Edmonton was established as a preserve for buffalo and Wood Buffalo National Park, a 17,300-sq-mile area straddling the Alberta-Northwest Territories border, was established as a refuge for the largest surviving herd of buffalo in North America. In British Columbia, through agreement between federal and provincial governments, two scenic areas were established as National Parks — Mount Revelstoke National Park and Kootenay National Park.

Between 1930 and 1973 the following were added to the chain of Canada's national parks: Northwest Territories, Nahanni and Auyuittuq (Baffin Island); Yukon Territory, Kluane; British Columbia, Pacific Rim; Ontario, Pukaskwa; Quebec, La Mauricie and Forillon; New Brunswick, Kouchibouguac and Fundy; Nova Scotia, Cape Breton Highlands and Kejimikujik; Prince Edward Island, Prince Edward Island National Park; Newfoundland, Terra Nova and Gros Morne.

In the case of parks in the Yukon Territory and Northwest Territories, lands have been reserved from all alternative disposition by Orders in Council. Within provinces, land is acquired by the province acting within a federal-provincial agreement to establish a national park. These lands are transferred to Canada and the establishment of the park is formalized by Parliament, adding the boundary description in a schedule to the National Parks Act.

In 1971, *The national parks system planning manual* was published, in recognition that new and comprehensive measures are needed to preserve Canada's natural heritage. With a view to protecting not only unique and outstanding areas of the Canadian land and sea-scapes but also those representative of its physical, biological, and oceanographic characteristics, 48 distinctive natural regions were identified for which natural history themes have been defined.

Encompassing more than 50,000 sq miles, the system is now the largest and most rapidly expanding in the world.

A detailed list of national parks was included in the 1972 and 1973 editions of the *Canada Year Book*, and a location map and details of these parks are available in *Canada's national parks* published by the Department of Indian Affairs and Northern Development.

Each park is developed to yield the recreational/conservational potential for which it is suited. Sightseeing, camping, fishing, hiking, photography and nature study are the most popular forms of recreation common to the parks. A program was initiated in 1970 to encourage national, provincial and local associations and private citizens to express their views at special public hearings on development plans for specific parks.

In 88 years, through co-operation between provincial and territorial governments, Canada's national park system has grown to become the world's largest. In 1974, over 16 million persons visited the parks.

National marine parks. Canada is bounded by three oceans and has the largest volume of fresh water in the world. The national parks system will be extended to include representations of the Pacific, Arctic and Atlantic coasts and inland waters, with identification of Marine Natural Regions and Marine Natural History Themes.

National landmarks. Preservation of specific natural wonders, such as the Chub crater in northern Quebec, the frozen pingoes of the Arctic, semi-desert and eroded hills of the Prairies and mountain caves and sea-scapes, would allow on-site interpretation of Canada's natural evolution.

Wild rivers. Many undeveloped Canadian rivers — some with historic appeal — are being surveyed as potential wilderness routes.

Agreements for Recreation and Conservation (ARC). In the past few years Canadians have become increasingly concerned about their natural and historic heritage. Governments at all levels have been acting to protect and preserve it before it is too late. A new program of Parks Canada was officially created to provide Canadians with new ways and opportunities to appreciate their natural, cultural and historical heritage. This new program — Agreements for Recreation and Conservation — has two principal elements: waterways and land-based byways. The waterways and byways to be developed through the ARC Program will be mutually agreed upon by the provincial and federal governments.

Waterways are differentiated into historic waterways and wild rivers. Canada's rivers, lakes, coastal waters, and canals formed an important element in the history of movement and development across Canada. In recognizing these historic water routes, the ARC Program plans to develop a system of historic waterways across Canada offering a diversity of recreational opportunities. For example, canal systems such as the Trent-Severn and Rideau (in Ontario) provide for a broad spectrum of water and shoreland recreational activities as well as giving interesting insight into Canada's historical and cultural heritage. The second type of waterway, wild rivers, are an integral part of our natural heritage which must be identified now and set aside to be free of exploitation while there is still time and the opportunity to protect them. Some of these waterways have historical value, but their main attractiveness lies in their beauty and untamed nature.

Byways will provide trails for hiking, horseback riding, bicycling or scenic roadways for leisure motoring. Trails for non-motorized vehicles will be established for their scenic and historic interest. Motor trails will introduce a new concept of automobile travel. Motor trails or parkways would invite motorists to leave the super highways and take leisurely drives through the scenic countryside. Parkway will also provide access to recreational areas, campgrounds, picnic sites, hiking and nature trails, and where possible will link important parks and historic sites.

Gatineau Park. In addition to the national parks described above, there is a 138-sq-mile recreation area known as Gatineau Park north of the cities of Ottawa and Hull. Although not designated as a national park, this area is being developed by the federal government as part of the National Capital Region and is under the care of the National Capital Commission. It is a wilderness area of great potential, extending northward from Hull for 35 miles. It now has 25 miles of parkway, magnificent lookouts, lakes, fishing streams, beaches, picnic areas, camping sites, skiing and walking trails and is already one of the finest recreation areas in Canada, enjoyed by nearly 1.8 million visitors each year. A master plan for its further development is under way.

1.4.2 Provincial parks

All provincial governments have established parks within their boundaries. Some parks are wilderness areas set aside in order that some portions of the country might be retained in their natural state. Most of them, however, are smaller areas of exceptional scenic interest which are easily accessible and are equipped or slated for future development as recreational parks with camping and picnic facilities.

Newfoundland. Altogether, 3,109 sq miles of wilderness, reservation, park lands and public beaches are administered by provincial government agencies. Of this land, 2,785 sq miles are contained within two wilderness areas administered by the Wildlife Division of the Department of Tourism. The remaining 324 sq miles of development and reserved public park land are under the jurisdiction of the Provincial Parks Division of the Department of Tourism. Of that area, 74 sq miles are in 45 developed provincial parks, two sq miles in protected public beaches and 248 sq miles in 14 provincial park reserves. Operation of these parks is directed toward preservation of the natural environment and most of them are located in wilderness areas, developed only for picnicking and camping. Regulations prohibit hunting and other types of resource exploitation; sports fishing, however, is encouraged. There is a continuing upward trend in the number of park users, both in day-use and overnight areas.

Prince Edward Island. There are 39 areas under the Prince Edward Island Provincial Park System comprising five classes of parks: nature preserves, natural environment parks, recreation parks, wayside/beach access, and historic parks. The parks system enhances the scenic drives which loop the coastal areas of the province.

Green Park is an historic park in a natural park setting at the junction of the Bedford and Trout rivers. It incorporates a shipbuilding centre consisting of the original home of James Yeo, a shipbuilder of the mid-1800s, a newly constructed interpretative centre and a shipbuilding site in the development stage. Strathgartney Park, a 40-acre tract of land on the Trans-Canada Highway between Charlottetown and Borden is an excellent picnic site and campground with its hardwood groves, fresh spring water and beautiful view over the West River and the surrounding country. Lord Selkirk Park, an area of 30 acres at Eldon, is of historic interest in that it contains an old French cemetery and marks the spot on the shoreline where Lord Selkirk landed. Brudenell River Park and Golf Course, comprising 1,285 acres at Roseneath, has a considerable area of woodland and runs to the shore of the Brudenell River. Jacques Cartier Park, an area of 23 acres at Kildare Beach four miles from Alberton, is of historic significance as the place where Jacques Cartier first landed on Prince Edward Island. Cabot Park at Malpeque, named in honour of John Cabot, is a 300-acre area with sandy beaches and an interesting museum. Several small parks have been developed or are under development. A fee of \$4.50 plus tax is charged for serviced tent and trailer sites and \$3.50 plus tax for unserviced sites. The parks are maintained by the Department of the Environment and Tourism.

Nova Scotia. The provincial park system is administered by the Department of Lands and Forests and consists of 18 overnight campground parks, 46 day-use picnic park and roadside table sites and 16 day-use beach parks having a total acreage of 8,274. An additional 95 sites containing about 11,573 acres are held in reserve for future development. Campground parks are located near major highways throughout the province and are designed to provide overnight camping accommodations and usually contain a day-use picnic ground. They range in size from 65 to 1,200 acres and the number of campsites varies from 30 to 175. Basic facilities include potable water, vault toilets, picnic tables, and dumping stations; there are no hook-up services for trailers. Picnic parks are designed as roadside day-use rest areas and are located at 20- to 40-mile intervals along major highways other than on the controlled access routes. These parks range in size from less than one acre to more than 200 acres and are provided with basic facilities similar to those in campground parks. Day-use beach parks are designed to serve as recreational areas and are provided with picnic tables, potable water, vault toilets and change houses. Additional good quality beaches are being developed dependent upon demand and location. The overnight camping fee is \$2.50 per party per night and there are no vehicle entry permits or day-use fees. The provincial park system provides about 10% of the total number of campsites in the province with the national park system providing about 15% and the private sector the remaining 75%.

New Brunswick. The New Brunswick provincial park system, which is administered by the Department of Tourism, includes 22 recreational parks ranging in size from 25 to 1,400 acres, 28 rest areas, nine campground parks, eight beach parks, a marine park and a resource park. Most of the park sites are located in rural areas, fairly evenly distributed throughout the province, and are adjacent to or easily accessible from main trunk roads. All parks contain tables, some form of toilet facility and a potable water supply, but more elaborate facilities are available in the larger parks. A vehicle fee is charged at some parks and a daily camping fee of \$2.50 to \$3.50 is in effect at 24 of the larger parks, subject to change without notice. The Department also maintains a wildlife park at Woolastook near Fredericton where various species of wildlife to be found in the province are displayed. In 1973 over 4 million persons visited the provincial parks. Several parks have organized activity programs and supervised swimming with qualified life-guards. Mactaquac, near Fredericton, one of two year-round parks, boasts a championship 18-hole, 7,030-yard golf course and two marinas. Both Mactaquac and New River Beach parks, between St. Stephen and Saint John, have interpretative programs with qualified naturalists on staff. During the winter there are facilities for snowmobiling, cross-country skiing, snowshoeing, tobogganing, skating, sleigh rides and camping. Sugarloaf, near Campbellton, the other year-round park, features an alpine ski hill with three lifts, cross-country skiing, snowmobiling and tobogganing. In the past few years services on the 54,000 acres of parkland New Brunswick maintains have been expanded and improved so that the visitor is offered a full and versatile recreational program.

Quebec. The major parks in Quebec extend over almost 75,000 sq miles, about 13% of the area of the province. Excluding James Bay Park, they cover nearly 20% of the forest area south of the 52nd parallel. There are 30 major parks, the oldest of which are Mont-Tremblant Park, 80 miles north of Montreal, dating back to 1894 and Laurentide Park, 30 miles north of Quebec City, to 1895. The former covers 990 sq miles, and the latter 4,060 sq miles. Gaspé Park, an area of 498 sq miles, was established in 1937 chiefly to protect the caribou, then threatened by extinction; a herd of caribou can now be found on Mount Albert. The same concern for the future of these animals prompted the creation of Laurentide Park in 1895. Unfortunately, in spite of the protection afforded, the caribou eventually disappeared; however, they have since been successfully re-introduced. La Vérendrye Park, 140 miles northwest of Montreal, was created in 1939 as the Mont Laurier-Senneterre Highway Fish and Game Reserve. In 1950, the Quebec government gave the territory its present name in honour of the famous Canadian explorer, Pierre Gaultier de Varenne, Sieur de La Vérendrye, who discovered the Rocky Mountains. This vast and open area of wilderness now extends over 5,257 sq miles. In 1938, an Act provided for the creation of Mont-Orford Park, west of Sherbrooke. Although much smaller in size, only 15 sq miles, this regional park is a recreation-intensive ground where camping is very popular. Since then, more than 20 parks have been successively created, the major ones being: Chibougamau, Port-Daniel, Mistassini, Rimouski, Matane, St. Maurice, Port-Cartier-Sept Îles, Portneuf, Mastigouche, Joliette and Papineau-Labelle. These parks are administered directly by the Parks Branch of the Department of Tourism, Fish and Game.

As far as open-air recreation is concerned, fishing has always been the most popular activity in Quebec parks. In 1971, the Department of Tourism, Fish and Game established three new parks—Mastigouche, Joliette and Labelle—to give more anglers access to many lakes and rivers near large urban centres. Papineau Park, created in 1965, was also made accessible to a larger public when it was formed into the double Papineau-Labelle Park. To allow as many anglers as possible to use these new facilities, fishing “by the day” was instituted—a system permitting advance reservation of an area for one day at a time; reservations may be made 48 hours in advance, on a first-come, first-served basis, by telephoning, toll-free, the central reservations office at one of three numbers depending on whether the call is made in Quebec, Montreal or elsewhere in the province. In 1975 this service was available at 15 parks: Matane, Rimouski, Laurentide, Portneuf, St. Maurice, Mastigouche, Joliette, Mont-Tremblant, Papineau-Labelle, Chibougamau, Port-Daniel, Baillargeon, Baldwin, Gaspé and Sept Îles-Port-Cartier.

The Quebec government has also set aside several salmon streams as fishing reserves for public use, including the St. Jean, Petite Cascapédia, Matapédia, Ste. Anne, Cap Chat and Matane rivers in the Gaspé area, the Moisie and Laval rivers on the north shore of the St.

Lawrence, and the Petit Saguenay, a tributary of the Saguenay River. Salmon is the principal catch but salmon trout is also sought. Hunting was generally prohibited in the parks until 1962. Moose hunting for wildlife-management purposes is now allowed, for Quebec residents only, in the following parks: Laurentide, La Vérendrye, Matane, Portneuf, Mont-Tremblant, St. Maurice, Haute-Mauricie and Dunière. Deer hunting is permitted in Rimouski Park under certain conditions. In 1972, small game hunting was also permitted in Papineau-Labelle, Mastigouche, Joliette, Portneuf, St. Maurice, Rimouski and Matane parks. Anticosti Island is now administered by the Parks Branch and deer hunting is permitted there as is salmon fishing in six streams. Registration is by lottery.

The growing popularity of camping by the local population and visitors to Quebec has led the Parks Branch to increase the number of campsites as a supplement to the network of privately operated sites. In eastern Quebec, provincial campsites are located at Carleton, Port-Daniel, Moisie, Mont St. Pierre, Percé, Amqui and Trois-Pistoles; at Îles-de-la-Madeleine, there are camping grounds at Grande-Entrée and Gros-Cap. Closer to Quebec City are St. Alexandre (Kamouraska), Montmagny, St. Jean (Île d'Orléans), Stoneham, Villeneuve, Vincennes (Beaumont) and St. Joseph (Beauce). More or less surrounding Metropolitan Montreal are the parks of Mont-Orford, des Voltigeurs (Drummondville), Côte-Sainte-Catherine, Paul-Sauvé (Oka), Dollard-des-Ormeaux, Pointe-des-Cascades, Coteau-Landing and Sainte-Véronique.

The government has provided safe and attractive snowmobile trails in several parks since 1971: Portneuf, St. Maurice, Paul-Sauvé (Oka), Mont-Tremblant, Joliette, Mastigouche, Papineau-Labelle parks. Cross-country skiing has become a favourite sport especially for families and groups of friends. The Parks Branch has laid out trails in some parks, particularly in the Mercier Camp area of Laurentide Park where heated facilities were installed. Trails are well marked and of various lengths and degrees of difficulty. Mont-Orford, Mont-Tremblant and Paul-Sauvé parks also received large numbers of cross-country skiing and snowshoeing enthusiasts.

Ontario. There are 116 provincial parks available for public use in Ontario and several new parks are in process of development; 135 other areas, comprising 1,965 sq miles, are held in reserve for future development. The total area of the Ontario provincial park system is about 18,314 sq miles. The parklands are administered by the Parks Division of the Ministry of Natural Resources. The seven largest parks — Polar Bear, Algonquin, Quetico, Lake Superior, Missinaibi, Killarney and Sibley — have a combined area of about 15,076 sq miles. Polar Bear Park is the largest in the system, occupying 9,300 sq miles of Hudson Bay Lowland bordering Hudson and James bays containing boreal forest, tundra and arctic flora and fauna. Algonquin Park covers 2,910 sq miles, has 14 picnic and camping areas accessible by car and offers particularly fine canoeing opportunities in the interior.

Under the Wilderness Areas Act of 1959, 40 wilderness areas have been established. They vary in size, character and significance but all were established for their historic, scientific, aesthetic or cultural values. In 1967 a policy of park classification and parkland zoning was established to achieve a balanced park system and to provide a framework for positive and effective development and management. Five park classes were established — primitive, natural environment, wild river, nature reserve and recreation. Comparable zones within parks were also established — primitive, natural, historic, multiple use and recreation. Some areas once protected under the Wilderness Areas Act for their scientific values are being changed in law to be protected as nature reserves under the Provincial Parks Act. There are now six nature reserves, four of which were previously under the Wilderness Areas Act. All nature reserves contain natural features and phenomena that are either unique or typical of the primitive or contemporary landscapes which together form the ecological mosaic of Ontario. By the end of 1973, there were five wild river parks in existence, Mississagi, Chapleau-Nemegosenda, Lady Evelyn, Mattawa and Winisk.

To meet the rising pressures for recreational space Ontario created the North Georgian Bay Recreational Reserve which covers 4,500 sq miles of country lying generally between Algoma and Parry Sound on the north shore of Georgian Bay and includes the channel between Manitoulin Island and the mainland, the 30,000 islands, the route of the voyageurs by way of French River, the remaining shoreline of Lake Nipissing and the La Cloche

Mountains. The Reserve is not a provincial park nor a wilderness area but an area following a normal course of development which is already used extensively for recreation.

The number of park visitors increases year by year; in 1974 there were over 11 million including 1.6 million campers using more than 21,000 campsites. The charge for vehicles is \$1.50 a day or \$15 a year, and the camping charge \$3.50 a night including vehicle. Picnic tables, fireplaces, fuelwood, tested drinking water and washrooms are provided at supervised tent and trailer campgrounds and all parks have trailer sanitation stations. Interpretative and naturalist programs are being expanded continually and such services as museums, outdoor exhibits, conducted trips, illustrated talks and labelled nature trails are available in many parks.

Manitoba. The provincial parks system of Manitoba, administered by the Parks Branch of the Department of Tourism, Recreation and Cultural Affairs, consists of nine major classifications to provide a wide range of types of recreation: Provincial Natural Parks are relatively spacious land and water areas adaptable to multi-use management to provide a wide range of public use and enjoyment; Provincial Wilderness Parks are areas of limited development to maintain and preserve unique features or situations; Provincial Recreation Parks are spacious areas readily accessible and available for all-purpose recreational use; Provincial Recreational Travelways are routes of travel significant in the history and development of the province and which provide opportunities for camping, picnicking and interpretation; Provincial Heritage Parks are areas established for their human history and unique natural value or quality in illustrating or interpreting the provincial heritage, and not for their recreational potential; Provincial Wayside Parks are close to highways in areas designed to serve transient users; Marine Parks are near waterways; Access Sites are areas providing basic facilities for boating to permit access to fishing waters as opposed to Marine Parks which provide facilities for recreational boating as well as fishing; and information centres near highways provide regional interest and provincial travel information.

There are 10 provincial parks in Manitoba. Asessippi Provincial Park covers nine square miles of scenic river valley and rolling hills behind the Shellmouth Dam at the junction of the Shell and Assiniboine rivers near the Saskatchewan border. Birds Hill Provincial Park is a 13-sq-mile multi-purpose park offering an 80-acre man-made lake within easy reach of Winnipeg. Clearwater Provincial Park is located 20 miles north of The Pas and covers an area of 230 sq miles. Duck Mountain Provincial Park comprises 492 sq miles of rolling land and 73 lakes northwest of Dauphin. Grass River Provincial Park is located near Cranberry Portage in northern Manitoba and comprises 230 sq miles of virtually roadless, rugged terrain that is a challenge to veteran outdoorsmen. Grand Beach Provincial Park is located 60 miles north of Winnipeg on the east shore of Lake Winnipeg. This 14-sq-mile beach and park is fronted by three miles of broad white sand beach. A few hours drive north of Winnipeg, Hecla Provincial Park covers 332 sq miles and is the most recent addition to the park system. The park includes the Lake Winnipeg islands of Hecla, Black, Deer and several smaller islands. Grindstone Point, adjacent to Hecla Provincial Park and on the mainland, has been designated as a recreation area in conjunction with the park. Hecla village is an historic Icelandic fishing site. Spruce Woods Provincial Park is located 30 miles east of Brandon, and covers an area of 90 sq miles. Turtle Mountain Provincial Park covers 73 sq miles along the international border in the southwest corner of the province. The Whiteshell Provincial Park, covering an area of more than 1,056 sq miles of rugged precambrian country, is the largest provincial park in Manitoba.

Manitoba provincial parks cover a total area of about 3,385 sq miles. In addition, there are 43 provincial recreation areas, 10 provincial forest reserves, 90 provincial wayside parks, 45 historical sites and two provincial heritage parks. The park system contains more than 60 campgrounds with over 5,000 campsites, as well as many hunting and fishing lodges, motels, hotels and cabins. Within the park system there are over 25 hiking trails, 15 snowmobile trails, and 18 canoe routes.

Popularity of Manitoba provincial parks and recreation areas is indicated by impressive annual increases in the number of park visitors, estimated at over 4 million for the year ended March 31, 1975. The admission fee to Manitoba's provincial parks is \$1 a day or \$5 for the season.

Saskatchewan. Saskatchewan's 17 provincial parks, comprising 1,880 sq miles of recreation land, range from forested parklands in the prairies and valley parks in the Qu'Appelle Valley to rugged northland settings. Each park offers camping, picnicking, boating and swimming

facilities and a variety of recreational activities. Eleven of the parks operate a supervised recreation program of regularly scheduled activities for all ages — arts and crafts, hikes along park nature trails, social functions and numerous team sports. Moose Mountain has a split-fieldstone chalet and modern cabin accommodation. Cabin facilities are also available at Cypress Hills, Duck Mountain and Greenwater Lake parks. Golf courses are found at Cypress Hills, Greenwater Lake, Moose Mountain and Duck Mountain parks. The forest of lodgepole pine and white spruce in Cypress Hills Park provides cover for elk, deer, beaver, sharp-tailed grouse; antelope range on the plains nearby. In Duck Mountain, Moose Mountain and Greenwater Lake parks, there are moose, elk, bear, deer and beaver as well as several varieties of grouse and many species of waterfowl and smaller land birds. Pike, pickerel and perch abound in almost all park lakes; brook, lake and rainbow trout are found in northern waters. Canoe routes and commercially operated fishing and hunting camps are in the province's three semi-wilderness parks — La Ronge, Nipawin and Meadow Lake. Roadside camp and picnic grounds are in operation and four official campgrounds and several other camping areas are available along the province's 406-mile stretch of Trans-Canada Highway. Saskatchewan also operates 86 regional parks which, although designed primarily with local patrons in mind, attract large numbers of tourists. Danielson Park has a modern visitors' centre with cafeteria and interpretative displays. A 40,000-acre wilderness area in east-central Saskatchewan is appropriately named Wildcat Hill. Marked sites of historic interest total 143 and include the Wood Mountain NWMP Post, Last Mountain House, Touchwood Hills, Cannington Manor, Steele Narrows, Fort Carlton, Cumberland House and Duck Lake historic parks. With the increasing trend to winter recreation, ski resorts are in operation at White Track in Buffalo Pound Provincial Park and at Mount Blackstrap in the Blackstrap Recreation Area. There are also ski slopes in Duck Mountain Provincial Park and several of the regional parks as well as cross-country ski and snowmobile trails throughout the province.

Alberta has 51 provincial parks containing 219 sq miles; 47 of these, with a total area of approximately 208 sq miles, are in use and continuing development. Cypress Hills Provincial Park, with an area of 78 sq miles, is the largest and is situated in the southeast portion of the province. Other parks are: Aspen Beach, Beauvais Lake, Big Hill Springs, Big Knife, Bow Valley, Bragg Creek, Calling Lake, Chain Lakes, Crimson Lake, Cross Lake, Dillberry Lake, Dinosaur, Dry Island Buffalo Jump, Garner Lake, Gooseberry Lake, Gregoire Lake, Hasse Lake, Hommy, Jarvis Bay, Kinbrook Island, Lac Cardinal, Lesser Slave Lake, Little Bow, Little Fish Lake, Long Lake, Ma-Me-O Beach, Miquelon Lake, Moonshine Lake, Moose Lake, O'Brien, Park Lake, Pembina River, Pigeon Lake, Police Outpost, Red Lodge, Rochon Sands, Saskatoon Island, Sir Winston Churchill, Taber, Thunder Lake, The Vermilion, Tillebrook Trans-Canada Campsite, Wabamun Lake, William A. Switzer (formerly Entrance), Williamson, Willow Creek, Winagami Lake, Woolford, Writing-on-Stone and Young's Point. These parks, which are generally provided with picnic, camping and playground facilities, are maintained by the Department of Lands and Forests, Provincial Parks Division, primarily for the recreation and enjoyment of residents and visitors. There is a park within easy reach of almost every town in Alberta and over 4 million tourists and vacationers visit the parks annually.

In addition to the provincial parks, four areas have been set aside in order to protect the natural environment for present and future generations to view. They are: Willmore Wilderness Park (1,775 sq miles) which adjoins Jasper National Park in the north and extends along the British Columbia border, Siffleur Wilderness Area (159 sq miles), White Goat Wilderness Area (171 sq miles) and Ghost River Wilderness Area (59 sq miles) all of which attach onto the east side of Jasper and Banff national parks.

Complementing the wilderness areas are six natural areas which were established in 1968-70 in representative zones of the province: Kootenay Plains (8,320 acres), Foothills (160 acres), Parkland (159 acres), Brown-Lowrey (640 acres), Red Rock Coulee (801 acres) and Plateau Mountain (320 acres).

British Columbia. There are 321 (175 developed) provincial parks in British Columbia, having a total area of about 13,350 sq miles. These parks are classified as A, B and C. Class A parks are intended to preserve outstanding natural, scenic and historic features of the province for public recreation; they have a high degree of legislative protection against exploitation and alienation. Class B parks are also primarily for the protection of natural attractions but other

resource use may be permitted if it does not unduly impair recreational values. Class C parks are intended primarily for the use of local residents and are usually managed by local park boards. Nature Conservancy Areas in any park are fully protected from resource development and are dedicated to a variety of recreational uses. In addition to provincial parks there are 17 Recreation Areas encompassing a total area of 890 sq miles and one wilderness conservancy, Purcell, of 500 sq miles, administered by the Parks Branch. There are immense wilderness areas such as Tweedsmuir Park and Wells Gray Park and outstanding scenic and mountain parks such as Garibaldi, Mount Robson, Manning, Bowron Lake, Mount Edziza, Atlin, Kwadacha Wilderness, Tatlatui, and Mount Assiniboine. Naikoon Park, 280 sq miles on the northeast tip of Graham Island is the first major park in the Queen Charlotte Islands. In 1973, 82 parks were established by an act of the legislature giving them complete protection by law. The formal gardens of Peace Arch Park are a monument to the goodwill between Canada and the United States. Vancouver Island is the site of Strathcona, first (1911) and one of the largest (875 sq miles) parks in the system, as well as a number of smaller parks. The gold town of Barkerville was restored and became the first provincial historic park; Fort Steele in the East Kootenay area is also being restored to preserve another of British Columbia's pioneer settlements. Eighteen marine parks with mooring facilities and campgrounds have been developed on mainland inlets and coastal islands.

The popularity of British Columbia's parks with their integrated campgrounds and picnic areas is attested to by the fact that over 10 million park visits were recorded during 1974; about 20% of the visitors were campers. Mount Seymour, Cultus Lake and Golden Ears parks were the most widely used.

1.4.3 The National Capital Region

Canada's Capital lies in a magnificent natural setting on the south shore of the Ottawa River below the Chaudière Falls and just above the confluence of the Rideau and Gatineau rivers. The original inhabitants of this area were the Algonquin Indians who were driven out by the Iroquois in the middle of the 17th century. Champlain explored the Ottawa in 1613 and called it "la grande rivière des Algomequins"; early English traders called it the Grand River. "Ottawa" is the anglicized form of Outaouac or Outaouais, the name of the Indian tribe from Lake Huron which traded with the French in the 17th century. Explorers, fur-traders, missionaries and, during the 19th century, lumbermen and settlers travelled up and down the Ottawa River.

The first settlement in the region was founded by Philemon Wright from Woburn, Massachusetts. Early in 1800 he and a small group of farmers established a settlement in what is now Hull; he brought in tradesmen and soon had a small self-sufficient community. Wright started the great Ottawa Valley timber trade by taking a raft to Quebec City in 1806, fortuitously meeting England's need for an alternative source of timber when Napoleon had closed the Baltic timber trade.

Settlement on the south shore of the river commenced in earnest about a generation later. The War of 1812 drew attention to the vulnerability of the line of communications along the St. Lawrence River linking Quebec City with the settlements in Upper Canada; a secure alternative route was needed. After many delays and studies, a new route to Kingston via the Ottawa River and Rideau and Cataraqui river systems was approved. Finally, in 1826, Lieutenant-Colonel John By of the Royal Engineers was sent to the Chaudière area to build a canal from that point to Kingston. By employed two companies of Royal Sappers and Miners and a labour force, mainly Irish, of several thousand men to construct the canal. In 1823, the Earl of Dalhousie, Governor in Chief of British North America, had secured commanding ground for the Town. In 1827 By laid out two settlements, Upper Town and Lower Town, adjacent to this Crown land, at that time called Barrack Hill. The canal was completed in 1832 and Bytown began to grow and prosper. Stores, factories, banks, churches and schools appeared. Steamboats plied the river and canal. A newspaper, the *Bytown Gazette*, was started in 1836.

Bytown was now the inland centre of the squared timber trade and by 1850 could boast of some fine stone buildings, among them the home of Thomas MacKay which today forms the central part of the residence of the Governor General of Canada. A change then occurred in the timber industry; the British system of preferential import duties on squared white and red pine logs was abandoned and trade began to decline. However, by this time the accessible

forest stands of the eastern United States were depleted and sawn lumber was needed to house a growing population. Also, the American railway and canal network had extended to the Canadian border making transportation easy. Encouraged by these favourable conditions American industrialists came to Bytown and established large sawmills by the Chaudière Falls. Soon the islands about the falls and the flats on both shores were covered with lumber piles and loaded barges were on their way to the American market. The lumber industry began its rise to a position of dominance. At the beginning of 1855, Bytown became a city and took the name Ottawa.

The United Province of Canada, since its formation in 1841 had shuttled its capital between Kingston, Toronto, Montreal and Quebec and was now trying to agree on a permanent site. At the end of 1857 Queen Victoria settled the dispute by choosing Ottawa. Government buildings for the new capital were designed and contracts were let in 1859 for their construction. However, the cost was much greater than expected and it was not until 1866 that the government of the Province of Canada actually moved to Ottawa. The next year the first Parliament of the new Dominion of Canada met in an incomplete Parliament Building, situated on the former Barrack Hill.

The nation was prosperous during most of the next decade. Ottawa grew and the government expanded as the Dominion extended its authority over more and more of British North America. In 1871 the city had a population of about 22,000. Many fine homes and stores in stone and brick were built. The Departmental Buildings, flanking the Parliament Building on the Hill, were enlarged. An old wooden City Hall near the Rideau Canal was replaced in 1876 by a stone building and a large post office was erected at the city's centre. By the end of the century, Ottawa was a flourishing industrial centre with a population of 59,000. It remained the hub of the lumber industry of eastern Canada, had the largest paper mills in the country and the leading match factory in the world. However, little effort had been made to preserve or enhance its natural beauty until the Ottawa Improvement Commission was formed in 1899 and the Driveway along the Rideau Canal was begun. Progress was slow but in the years up to the beginning of World War I the city centre began to take on a new face. Many new government buildings were built — the Dominion Observatory and Geodetic Building at the Experimental Farm, the Archives Building, the Victoria Memorial Museum, the Royal Canadian Mint and the Connaught Building. In 1912 the Grand Trunk Railway completed construction of the Union Station and the Chateau Laurier. During this period there were several studies and plans for the improvement of the National Capital but these were deferred because of the War and for other reasons. Fire destroyed the Parliament Building in 1916, leaving standing only the Library which now forms part of the building of neo-Gothic architecture which replaced it. The beautification of the Capital was continued by the Ottawa Improvement Commission until 1927 when it was replaced by the Federal District Commission. The first major step in the redevelopment of the National Capital took place in 1951 with the tabling of a comprehensive master plan for the National Capital Region, the "Gréber Plan". The National Capital Commission was formed in 1959 to carry out its recommendations.

Ottawa today, with a population of some 300,000, and the city of Hull on the north side of the Ottawa River, with a population of about 65,000, comprise the core of the National Capital Region, an area of about 1,800 sq miles in Ontario and Quebec. In lineal distance, the nearest extremity of the Region to Parliament Hill is 18 miles and the farthest is 35 miles. Within that area there are 57 municipalities and a total population of about 600,000. Industrial development in the Region is limited, a large proportion of the work force being employed by the federal government or associated with government functions.

Although the terms of reference of the National Capital Commission are "to prepare plans for and assist in the development, conservation and improvement of the National Capital Region in order that the nature and character of the seat of the Government of Canada may be in accordance with its national significance", it should be noted that the Commission does not have jurisdictional authority over any of the municipal or regional authorities or the two provincial governments concerned. Most matters affecting the municipalities — such as planning, zoning, land use, building density, public transit, parking and construction of streets, arterial roads and highways — are within their sole jurisdiction, subject only to provincial government approval, so that the National Capital Commission in its development

efforts depends essentially upon the co-operation of each municipality and provincial government. As a result of this co-operation, the cities of Ottawa and Hull and their surrounding areas have, as a whole, become an efficient and aesthetically satisfying place in which to carry on the nation's business and a fitting symbol of Canada's cultural and linguistic values.

In recent years, the efforts of the Commission have focused on the development of a unified and lively core for the Capital. At a constitutional conference in Ottawa in 1969, the federal and provincial first ministers declared "the cities of Ottawa and Hull and their surrounding areas" to be the Canadian Capital Region. Almost immediately, work began to remove the longstanding economic disparity between Hull and Ottawa. Fifty-nine acres have been acquired in Hull for a federal building program to house various government departments. These 59 acres include 44 acquired in 1972 by the Commission from the E.B. Eddy Company. In 1973 work was completed on the new Portage Bridge linking Ottawa and Hull and the new Airport Parkway from the airport to downtown Ottawa-Hull was opened.

The recreational amenities of the Region have been developed for people to use and enjoy. In addition to the well-known scenic driveways, parks and playgrounds, the Rideau Canal has been designed to provide a five-mile ice skating surface in winter and boating in summer. Maple sugar shanties, large garden allotments and 50 miles of bicycle paths winding past waterways and through pleasant wooded areas have also been developed. Public concerts in the parks, walking tours, attractive pedestrian malls and museums are there for the participation of all Canadians and their visitors and the Region has become a centre of national significance in which all may have a sense of pride and possession.

1.5 The environment

The Department of the Environment was created as a federal government department in June 1971 to spearhead the attack on pollution and ensure the proper management and development of Canada's renewable natural resources. It has the responsibility to initiate government-wide programs and to co-ordinate efforts related to environmental protection. It also provides specialist advisory services to other departments both in the formulation of programs and in the development of regulations under Federal Acts assigned to other ministers.

The Environmental Protection Service of the Department is responsible for developing and enforcing environmental protection regulations and other instruments used in implementing federal laws relating to the environment. It also serves as an information source for other federal departments administering legislation under which environmental regulations are developed.

The principal objective of the water pollution control program is the control and abatement of water pollution in Canada. The main objectives are: the reduction of existing pollution and the prevention of new problems; achievement of regional water quality objectives by means of appropriate programs; and the development of new technologies to solve water pollution control problems more economically. Water pollution control regulations and guidelines are being developed for all major industrial sectors. At the moment regulations governing the pulp and paper industry, mercury from the chlor-alkali industry and the petroleum refinery industry already exist. These regulations are promulgated under the Fisheries Act and restrict the amount of effluents an industry can discharge into waters inhabited by aquatic life. Other programs include water pollution surveys in shellfish growing areas; phosphorus concentration control regulations; analytical and advisory services to other federal departments and agencies; inventories of water pollution problems in Canada and annual assessments of pollution control costs and studies on the treatment of municipal and industrial waste waters.

The broad objectives of the air pollution control program are to preserve, restore, or enhance the quality of the ambient air in Canada for optimum social and economic benefits. Programs carried out to achieve these objectives include: collection and evaluation of information regarding air pollution sources in Canada; development of abatement and compliance programs for stationary and mobile air pollution sources; preparation of regulations controlling the amount of lead in leaded gases and defining the limits of lead and phosphorus in "unleaded" grades of gasoline; maintenance of a mobile motor vehicle emission testing facility and promulgation of national air quality objectives.

The Environmental Conservation Directorate is involved in developing and implementing programs designed to protect and conserve the environment. The environmental emergency program involves protective or preventive activities associated with unforeseen environmental threats, such as oil spills. The program examines the national state of preparedness to cope with such accidents, and co-ordinates the development of over-all improvement in the state of preparedness. It also acts as the focal point through which the expertise and resources of the Department can be brought to bear on an environmental accident.

The environmental contaminants program, which has been responsible for the development of the proposed Environmental Contaminants Act, involves the protection of the environment from the adverse effects of identifiable substances produced by industrial activities. This program is also responsible for the management of hazardous materials, which involves the development of codes of good practice, and guidelines for the identification, transportation, storage and disposal of environmentally hazardous materials. The solid waste management program's objectives are to reduce the impact on the environment and increase resource recovery and energy conservation from solid wastes.

The federal activities environmental protection program deals with matters associated with the facilities and activities of all federal government agencies and Crown corporations. Areas of concern cover both land installations and vessels, and include treatment and disposal of waste water, solid waste management, air pollution, noise pollution and other operations which are a threat to environmental quality. This program includes the responsibility for the development and implementation of a national approach to the management of noise and the responsibility for the ecological impact appraisal and control activities which include the development and implementation of ecological protection regulations, guidelines and codes; analysis and appraisal of ecological impact studies; implementation of ecological impact control measures; and associated enforcement and surveillance activities.

The federal government is also committed to cleaning up pollution problems at existing federal facilities within a reasonable time frame. Clean-up projects have dealt with water, air, noise, dust and solid waste pollution problems at airports, government offices, laboratories, grain elevators, defence bases, parks and ships and harbours.

1.5.1 Federal legislation

There are already a large number of statutes that are important in renewable resources and environmental quality management. Major pieces of legislation for which the Department of the Environment is responsible include the following: The Fisheries Act (RSC 1970, c.F-14, amended 1970); The Canada Water Act (and phosphate regulations) (RSC 1970, c.5 1st Supp.); The Migratory Birds Convention Act (RSC 1970, c.M-12); The International River Improvements Act (RSC 1970, c.I-22); The Game Export Act (RSC 1970, c.G-1); The Fisheries Development Act (and the Fish-Chilling Assistance Regulations) (RSC 1970, c.F-21, amended 1973 and 1974); The Clean Air Act (and Lead Free Gasoline Regulations) (SC 1970-71-72, c.47); The Forestry Development and Research Act (RSC 1970, c.F-30); Canada Wildlife Act (SC 1973, c.21); Weather Modification Information Act (SC 1970-71-72, c.59); and Fish Inspection Act (RSC 1970, c.F-12).

In view of the need to co-ordinate and consolidate the activities relating to environmental quality and renewable resource matters carried out by federal agencies other than the Department of the Environment, an Interdepartmental Committee on the Environment was established in 1973. This committee, with representation at the deputy minister level, is the primary forum for interdepartmental consultation on environmental and related resource issues and assists the Department of the Environment in co-ordinating the development and implementation of Canada's environmental policies and programs.

1.5.2 Federal-provincial programs

Jurisdiction over renewable resources and environmental matters is shared by the federal and provincial governments. In some areas, such as fisheries, legislative jurisdiction rests with the federal government and certain management and administrative responsibilities have been delegated to the provinces; in other areas, such as forest resources, the legislative jurisdiction rests with the provinces. Frequently management practices for one resource may affect the management of others and virtually all resource management practices are related to

environmental quality. As a result, many of the federal government's environmental protection and renewable resource programs are carried out in co-operation with the provinces.

In order to further develop and co-ordinate co-operative action, the Department of the Environment initiated discussions with the provinces toward concluding Federal-Provincial Accords for the Protection and Enhancement of Environmental Quality. These accords will provide the mechanism for co-operative action by federal and provincial governments and are viewed as "umbrella" agreements under which subsidiary agreements covering specific aspects of environmental action may be signed.

There is a wide range of federal-provincial programs and activities in the environmental and renewable resource field and examples of some of the current ones follow.

Assessments of the potential environmental impact of major projects, in which the federal government has an interest, are being carried out by federal departments in co-operation with provincial and territorial governments. Procedures have been issued for the implementation of a more formalized environmental assessment, review and protection process which ensures that environmental matters are taken into account throughout the planning and implementation of projects, programs or activities in which the federal government has an interest. This process will provide for consultation and co-operation with the provinces and territories in assessments of projects of mutual concern.

The National Air Pollution Surveillance Network established under the authority of the Clean Air Act consists, with certain exceptions, of monitoring stations operated by provincial governments using equipment loaned by the federal government.

The planning and management of Canada's water resources require continuing institutional arrangements within which all jurisdictions and expertise can be brought together for joint goal setting, planning and operation. Federal-provincial agreements under the authority of the Canada Water Act provide for the planning and implementation of water basin management programs and include agreements for joint study of various aspects of water management in specific geographical areas. Also, under the Canada Water Act, arrangements may be made with individual provinces, as required, to co-ordinate federal and provincial water quality monitoring programs and to exchange data.

There are many other formal and informal federal-provincial programs related to specific aspects of renewable resources and the environment such as fisheries, forest and wildlife management, hydrometric data gathering, flood damage assistance and flood control, and forest pest control. Also, specific non-recurring joint programs are developed from time to time. An example of this is the Canada/Ontario study to survey Great Lakes shoreline damage resulting from recent high water levels and to provide the basis for recommendations on long-term remedial and protective measures.

1.5.3 International programs

Canada is involved in two distinct types of multilateral programs — those which are primarily environmental and those which are primarily resource conservation and management. Most of the latter focus on the aquatic environment. For example, Canada is a member of the International Council for Exploration of the Sea. This 17-member body encourages and co-ordinates studies of the marine environment with particular reference to the living resources of the sea, primarily in the North Sea and North Atlantic. Canada is also a member of 10 international fisheries commissions established under the terms of formal conventions. These commissions assume responsibility for the investigation of specific living marine resources in defined areas, in order to further rationalize development and conservation of fisheries of common concern to member states.

Canada also participated in the International Hydrological Decade (January 1, 1965 — December 31, 1974) set up under United Nations Educational, Scientific and Cultural Organization (UNESCO) auspices to facilitate a better understanding of hydrological phenomena to allow predictions of the results of development of water resources in the interests of better management. The work has now been completed and the co-ordinating committee has held its last meeting. A follow-on program to promote education in the field of hydrology, called the International Hydrological Program, has been launched.

Within the framework of the International Hydrological Decade, Canada and the United States undertook an intensive study of Lake Ontario under the title International Field Year

for the Great Lakes. The field work was conducted between April 1, 1972 and March 31, 1973. During 1974, data were put in archive form and a preliminary report was prepared. More detailed reports will be published during the next two years.

In the area of environmental concerns but still within the aquatic environment, Canada has continued to play an active role in the Intergovernmental Maritime Consultative Organization (IMCO), one of the specialized agencies of the United Nations. In particular it has joined the newly created Marine Environment Protection Committee. In October 1973, IMCO sponsored an international conference on marine pollution which drafted an international agreement regulating the intentional and negligent discharges of oil and other harmful substances by ships and other equipment operating in the marine environment. This convention is now open for signature. The International Convention on Dumping of Wastes at Sea, formulated in accordance with a recommendation of the Stockholm UN Conference and concluded and opened for signature on December 29, 1972, has been signed by Canada and work is now proceeding on its ratification.

Because of Canada's extensive coastline and continental shelf, it has been deeply involved in the preparations for the Third United Nations Conference on the Law of the Sea. The procedural session opened in New York in December 1973 and the substantive session took place in July and August 1974, in Caracas, Venezuela. Among the issues dealt with at the Conference and in the Conference in Geneva in March 1975 were sovereign rights over the resources of the continental shelf, rights concerning the management and conservation of living resources in coastal waters, rights of coastal states to take measures to protect their marine environment, rights to control scientific research within zones of maritime jurisdiction, and rights of all states to the disposition of the riches of the seabed beyond national jurisdiction for the benefit of all mankind.

In the area of broad-spectrum multilateral environmental organizations, the United Nations Environment Program (UNEP) is the one which involves the largest cross-section of developed and developing countries representing economies ranging from centrally-planned to free-enterprise. This program was formed as a result of the Stockholm United Nations Conference on the Human Environment in 1972, and has its headquarters in Nairobi, Kenya. Canada is a member of the Governing Council, has participated actively in the development of its program, and has contributed to the UN Environment Fund. The Second Session of the Governing Council was held in Nairobi in March 1974 and priority programs approved included: work in the area of human settlements, human health and well-being; land, water and desertification; trade economics, technology and the transfer of technology; oceans; conservation of nature, wildlife and genetic resources; energy and the Earthwatch program. Nationally, work continued on the preparation of a co-ordinated federal-provincial response to the Stockholm Action Plan, taking into account Canadian needs and priorities.

Canada also played an active and visible role in two major UN-sponsored conferences in 1974 — the World Population Conference held in Bucharest in August, and the World Food Conference held in Rome in November. Preparatory work was also initiated for the UN Conference on Human Settlements (Habitat) scheduled for Vancouver in 1976, and for the UN World Water Conference scheduled for Buenos Aires in 1977.

In 1973 Canada became a full member of the Economic Commission for Europe, one of five regional economic commissions within the UN system. Environment-related activities are undertaken by a large number of the Commission's Principal Subsidiary Bodies, with a co-ordinating responsibility assigned to the Senior Advisers on Environmental Problems. Canada has been participating in a number of these activities and has been particularly interested in exploring ways of improving co-ordination and rationalizing resource allocations in those areas of common interest to a number of international organizations such as transboundary air pollution, environmental aspects of water resources management and non-waste technology.

Canada has also continued to participate in the UNESCO program on Man and the Biosphere (MAB) — an internationally co-ordinated interdisciplinary research program focusing on the conservation of the resources of the biosphere. As a member of the International Coordinating Council, Canada has been influential in building social science concerns into the development of proposals. Canada has continued to provide experts to participate in international meetings to further develop specific proposals. Nationally, work on two sub-program areas, urbanization, and agricultural and forestry practices has progressed to the stage of publishing provisional research frameworks and the hiring of two sub-program co-

ordinators. Progress has also been made in the development of an explicit outline of the process of selecting and evaluating research proposals. This aspect is considered important because of the interdisciplinary and participative nature of the MAB program, as well as the emphasis on policy-related studies.

In 1970, the Organization for Economic Co-operation and Development established an Environment Committee to promote understanding and international agreement on the assessment of the nature and implications of environmental problems and proposed solutions. Canada has participated actively in the work of this Committee and its various sector and advisory groups. During 1974, the first Environment Committee meeting at the ministerial level was held to review progress and the Committee's mandate. The recommendations on future work were approved and Canada is now reviewing them from the point of view of national priorities, and also of the most effective administrative structure within the Organization of carrying them out.

Canada is also a member of the North Atlantic Treaty Organization's Committee on the Challenges of the Modern Society. The work of this body is conducted through a series of pilot projects on specific problems with member countries participating only in those problems of special interest to them. Canada is currently participating in pilot projects on coastal water pollution, waste water treatment, advanced health care, and energy conservation. Canada was the lead country in a pilot project on inland water pollution and submitted the final report on this project in 1974.

Many international organizations are involved in monitoring programs and Canada has continued to participate in these collaborative efforts. For example, Canada is a member of the World Weather Watch, and has now established nine of a planned 11-station network for monitoring atmospheric air pollution in non-urban areas. In addition, and in co-operation with British Columbia, Canada is providing air quality data for Vancouver as part of a World Health Organization program. Canada has also contributed to the Development of an Integrated Global Ocean Station System and is co-operating in the continuing development of the Global Environmental Monitoring System, an integral part of the UNEP Earthwatch program.

Sources

- 1.1 Geography Division, Surveys and Mapping Branch, Department of Energy, Mines and Resources; population of Canada from the Census Field, Statistics Canada; population of the United States and Brazil, and areas of the USSR, China and Brazil from the United Nations *Statistical year book — 1971*.
- 1.1.1 Topographical Survey Directorate, Surveys and Mapping Branch, Department of Energy, Mines and Resources.
- 1.1.2 - 1.1.3 Information Services Branch, Department of the Environment.
- 1.1.4 - 1.1.5 Geography Division, Department of Energy, Mines and Resources.
- 1.2 Geological Survey of Canada, Department of Energy, Mines and Resources.
- 1.3.1 Information Services Branch, Department of the Environment.
- 1.3.2 Division of Physics, National Research Council.
- 1.4 - 1.4.1 Canada Year Book Section, Information Division, Statistics Canada; Information Services, Department of Indian Affairs and Northern Development; except Gatineau Park supplied by the National Capital Commission.
- 1.4.2 Supplied by the respective provincial government departments.
- 1.4.3 National Capital Commission.
- 1.5 Information Services Branch, Department of the Environment.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed		certain tables may not add due to rounding

1.1 Approximate land and freshwater areas, by province

Province or territory	Land <i>sq miles</i>	Freshwater <i>sq miles</i>	Total <i>sq miles</i>	Percentage of total area
Newfoundland	143,045	13,140	156,185	4.1
Island of Newfoundland	41,164	2,195	43,359	1.1
Labrador	101,887	10,945	112,826	3.0
Prince Edward Island	2,184	—	2,184	0.1
Nova Scotia	20,402	1,023	21,425	0.6
New Brunswick	27,835	519	28,354	0.7
Quebec	523,860	71,000	594,860	15.4
Ontario	344,092	68,490	412,582	10.7
Manitoba	211,775	39,225	251,000	6.5
Saskatchewan	220,182	31,518	251,700	6.5
Alberta	248,800	6,485	255,285	6.6
British Columbia	359,279	6,976	366,255	9.5
Yukon Territory	205,346	1,730	207,076	5.4
Northwest Territories	1,253,438	51,465	1,304,903	33.9
Franklin	541,753	7,500	549,253	14.3
Keewatin	218,460	9,700	228,160	5.9
Mackenzie	493,225	34,265	527,490	13.7
Canada	3,560,238	291,571	3,851,809	100.0

1.2 Principal heights in each province

Province and height	Elevation <i>ft</i>	Province and height	Elevation <i>ft</i>
NEWFOUNDLAND		QUEBEC (concluded)	
Long Range Mountains		Rond Summit (Sutton Mountains)	3,175
Lewis Hills	2,672	Mount Bayfield	2,925
Gros Morne	2,644	Mount Orford	2,875
Table Mountain (St. Barbe District)	2,375	Hereford Mountain	2,775
Mount St. Gregory	2,251	Barn Mountain	2,775
Gros Pate	2,152	Le Pinacle Mountain	2,325
Blue Mountain	2,128	The Laurentians	
Blue Hills of Couteau		Mont Tremblant	3,175
Peter Snout	1,625	Mont Sainte-Anne	2,625
Central Highlands		Mont Sir Wilfrid	2,569
Main Topsail	1,822	Monteregean Hills	
Mizzen Topsail	1,761	Brome Mountain	1,750
Tongat Mountains		Shefford Mountain	1,700
Unnamed peak (58°57' 63°47')	5,232	Mont Saint-Hilaire	1,350
Cirque Mountain	5,144	Yamaska Mountain	1,350
Mount Cladonia	4,766	Rougemont	1,300
Mount Elliot	4,553	ONTARIO	
Mount Tetragona	4,450	Highest point, Timiskaming District	
Quartzite Mountain	3,890	(47°20' 80°44')	2,275
Blow-Me-Down Mountain	3,880	Ogidaki Mountain	2,183
Kaumajet Mountains		Batchawana Mountain	2,142
Bishops Mitre	3,650	Tip Top Mountain	2,099
Finger Hill	3,390	Niagara Escarpment	
PRINCE EDWARD ISLAND		Blue Mountains	1,775
Highest point on the Island, Queens County (46°20' 63°27')	465	Osler Bluff	1,725
NOVA SCOTIA		Caledon Mountain	1,400
Highest point, Cape Breton (46°42' 60°36')	1,747	High Hill	1,163
Franey Mountain	1,405	Mount Nemo	1,000
Nutty Mountain (Cobequid)	1,204	MANITOBA	
Dalhousie Mountain (Cobequid)	1,115	Baldy Mountain	2,729
NEW BRUNSWICK		Porcupine Hills	2,700
Mount Carleton	2,690	Riding Mountain	2,000
Moose Mountain	1,325	SASKATCHEWAN	
QUEBEC		Cypress Hills	4,567
Mont D'Iberville (Torngat Mountains)	5,210	Wood Mountain	3,325
Appalachian Mountains		Vermilion Hills	2,575
Mont Jacques-Cartier (Shickshock Mountains)	4,160	ALBERTA	
Mount Richardson	3,887	Mount Columbia	12,294
Mount Albert District		The Twins	12,250
Albert Sud Summit	3,775	Mount Alberta	11,874
Mount Logan	3,725	Mount Assiniboine	11,870
Mont Mégantic	3,625	Mount Forbes	11,852
Albert Nord Summit	3,554	Mount Temple	11,626
Matawees Mountain	3,525	Mount Lyell	11,550
		Mount Hungabee	11,550
		Snow Dome	11,550
		Mount Kitchener	11,500

1.2 Principal heights in each province (concluded)

Province and height	Elevation <i>ft</i>	Province and height	Elevation <i>ft</i>
ALBERTA (concluded)		BRITISH COLUMBIA (concluded)	
Mount Athabasca	11,452	Mount Sir Alexander	10,740
Mount King Edward	11,400	Fresnoy Mountain	10,730
Mount Brazeau	11,386	Mount Gordon	10,550
Mount Victoria	11,365	Mount Stephen	10,495
Stutfield Peak	11,320	Cathedral Mountain	10,464
Mount Joffre	11,316	Odaray Mountain	10,350
Deltaform Mountain	11,235	The President	10,297
Mount Lefroy	11,230	Mount Laussedat	10,035
Mount Alexandra	11,214		
Mount Sir Douglas	11,174	YUKON TERRITORY	
Mount Woolley	11,170		
Lunette Peak	11,150	St. Elias Mountains	
Mount Hector	11,148	Mount Logan	19,850
Diadem Peak	11,060	Mount St. Elias	18,008
Mount Edith Cavell	11,033	Mount Lucania	17,147
Mount Fryatt	11,026	King Peak	16,971
Mount Chown	10,930	Mount Steele	16,644
Mount Wilson	10,700	Mount Wood	15,885
Clearwater Mountain	10,420	Mount Vancouver	15,700
Mount Coleman	10,286	Mount Hubbard	15,015
Eiffel Peak	10,101	Mount Walsh	14,780
Pinnacle Mountain	10,062	Mount Alverstone	14,565
		McArthur Peak	14,253
BRITISH COLUMBIA		Mount Augusta	14,070
Vancouver Island Ranges		Mount Kennedy	13,905
Golden Hinde	7,219	Mount Strickland	13,818
Mount Albert Edward	6,828	Mount Newton	13,811
Mount Arrowsmith	5,962	Mount Cook	13,760
Coast Mountains		Mount Craig	13,250
Mount Waddington	13,104	Mount Malaspina	12,750
St. Elias Mountains		Mount Badham	12,625
Fairweather Mountain	15,300	Mount Seattle	10,082
Mount Root	12,860		
Monashee Mountains		NORTHWEST TERRITORIES	
Mount Begbie	8,963		
Storm Hill	5,300	Arctic Islands	
Selkirk Mountains		Baffin	
Mount Sir Sandford	11,555	Penny Ice Cap	6,750
Mount Dawson	11,123	Mount Thule	5,614
Adamant Mountain	11,009	Cockscomb Mountain	5,330
Grand Mountain	10,842	Barnes Ice Cap	3,685
Iconoclast Mountain	10,666	Knife Edge Mountain	2,493
Rogers Peak	10,546		
Purcell Mountains		Banks	
Mount Farnham	11,343	Durham Heights	2,400
Mount Karnak	11,100	Devon	
Columbia (Cariboo) Mountains		Ice Cap	6,300
Sir Wilfrid Laurier	11,300	Ellesmere	
Rocky Mountains		Barbeau Peak, highest point in	
Mount Robson	12,972	Arctic Islands	8,584
Mount Clemenceau	12,001	Commonwealth Mountain	7,250
Mount Goodsir	11,750	Mount Jeffers	6,250
Mount Bryce	11,507	Mount Wood	4,750
The Helmet	11,250	Mount Cheops	4,750
Resplendent Mountain	11,240	Victoria	
Mount King George	11,226	Shaler Mountains	2,150
Whitehorn Mountain	11,139	Mount Bumpus	1,650
Mount Huber	11,051	Mainland	
Mount Freshfield	10,945	Mount Sir James MacBrien	9,062
Mount Mummery	10,918	Franklin Mountains	
Mount Vaux	10,891	Cap Mountain	5,175
Mount Ball	10,865	Mount Clark	4,798
Bush Mountain	10,850	Pointed Mountain	4,610
Mount Geikie	10,843	Nahanni Butte	4,579
		Richardson Mountains	
		Mount Goodenough	3,219

1.3 Elevations, areas and depths of the Great Lakes

Lake	Elevation ¹ <i>ft</i>	Length <i>miles</i>	Breadth <i>miles</i>	Maximum depth <i>ft</i>	Total area <i>sq miles</i>	Area on Canadian side of boundary <i>sq miles</i>
Superior	600	350	160	1,330	31,700	11,100
Michigan	579	307	118	923	22,300	—
Huron	579	206	183	750	23,000	13,900
St. Clair	573	26	24	21	430	268
Erie	570	241	57	210	9,910	4,930
Ontario	245	193	53	802	7,340	3,880

¹Long-term mean, 1860-1972; International Great Lakes Datum, 1955.

1.4 Elevations and areas of principal lakes¹ (exceeding 150 sq miles), by province

Province and lake	Elevation <i>ft</i>	Area <i>sq miles</i>	Province and lake	Elevation <i>ft</i>	Area <i>sq miles</i>
NEWFOUNDLAND AND LABRADOR			SASKATCHEWAN (concluded)		
Ashuanipi	1,735	231	Montreal	1,608	176
Atikoniak	1,700	167	Peter Pond	1,382	300
Grand	284	208	Pinehouse	1,262	156
Joseph	1,700	174	Primrose	1,964	173
Melville	tidal	1,185	Reindeer ^a	1,106	2,568
Michikamau	1,510	784	Scott	1,458	152
Lobstick	1,500	197	Tazin	1,130	151
Ossokmanuan Reservoir	1,570	322	Wollaston	1,306	1,035
Smallwood Reservoir	1,545	2,500 ^e			
NOVA SCOTIA			ALBERTA		
Bras d'Or	tidal	424	Bistcho	1,812	165
			Claire	700	555
			Lesser Slave	1,892	451
QUEBEC			BRITISH COLUMBIA		
Albanel	1,276	172	Atlin ^a	2,190	299
Bienville	1,400	482	Babine	2,332	191
Cabonga Reservoir	1,185	262	Kootenay	1,745	157
Dotois Reservoir	1,135	156	Ootsa	2,800	156
Eau Claire	790	534	Williston	2,180	680
Evans	792	211			
Gouin Reservoir	1,325	606	YUKON TERRITORY		
Kaniapiskau	1,850	182	Kluane	2,563	158
Leaf	tidal	175			
Lower Seal	860	223	NORTHWEST TERRITORIES		
Manouane	1,620	226	Aberdeen	261	425
Minto	550	294	Amadjuak	370	1,203
Mistassini	1,220	902	Angikuni	842	197
Payne	425	206	Artillery	1,196	213
Pipmuacan	1,300	378	Aubry	845	151
Saint-Jean	321	387	Aylmer	1,230	327
Sakami	640	229	Baker	8	729
			Bluenose	1,828	155
ONTARIO			Buffalo	870	237
Abitibi ^a	868	360	Clinton Colden	1,230	284
Big Trout	698	255	Colville	805	176
Lake of the Woods ^a (total			Contwoyto	1,460	370
1,679) Canadian part 1,216	1,060	1,216	De Gras	1,365	244
Nipigon	855	1,872	Des Bois	975	181
Nipissing	644	321	Dubawnt	774	1,480
Rainy (total 360)			Ennadai	1,020	263
Canadian part 286	1,108	286	Eskimo North	1	324
St. Joseph	1,218	190	Eskimo South	5	243
Sandy	906	203	Faber	699	170
Seul	1,170	640	Ferguson	35	227
Simcoe	718	287	Garry	487	377
Trout (English River)	1,294	160	Great Bear	512	12,096
			Great Slave	513	11,031
MANITOBA			Hail	21	190
Cedar	830	522	Hazen	520	209
Cross	679	292	Hottah	592	354
Dauphin	853	201	Kamilukuak	874	245
Gods	585	444	Kaminak	173	232
Granville	848	189	Kaminuriak	302	212
Island	744	472	Kasba	1,102	518
Manitoba	813	1,799	Keller	810	152
Molson	724	154	La Martre	870	686
Moose	838	528	Mac Alpine	578	173
Oxford	612	155	Mackay	1,415	410
Playgreen	711	254	Mallery	520	185
Sipiwesk	601	176	Netilling	95	2,140
Southern Indian	835	868	Netsilik	26	151
Winnipeg	713	9,417	Nonacho	1,045	303
Winnipegosis	830	2,075	Nueltin ^a	911	880
			Point	1,229	271
SASKATCHEWAN			Princess Mary	380	202
Amisk	964	166	Selwyn ^a	1,306	277
Athabasca ^a	700	3,064	Snowbird	1,177	195
Black	922	179	South Henik	604	198
Churchill	1,382	216	Takiyuak	1,250	417
Cree	1,597	554	Tathlina	920	221
Deschambault	1,063	209	Tebesjuak	480	222
Doré	1,506	248	Tehek	437	186
Frobisher	1,381	199	Trout	1,650	195
Île à la Crosse	1,380	151	Tulemalu	916	258
La Ronge	1,193	546	Wholdaia	1,195	262
			Yathkyed	461	559

Areas given are for mean water levels. All elevations are in feet above mean sea level.
¹Excludes Great Lakes, see Table 1.3.
^aSpans provincial or territorial boundary. Listed under province or territory containing larger portion. Area given is total area.

1.6 Areas of major islands, by region

Region and island	Area <i>sq miles</i>	Region and island	Area <i>sq miles</i>
Baffin Island	195,928	HUDSON BAY AND HUDSON STRAIT	
QUEEN ELIZABETH ISLANDS		Southampton	15,913
Ellesmere	75,767	Coats	2,123
Devon	21,331	Mansel	1,228
Axel Heiberg	16,671	Akimiski	1,159
Melville	16,274	Flaherty	612
Bathurst	6,194	Nottingham	530
Prince Patrick	6,119	Resolution	392
Ellef Ringnes	4,361	Vansittart	385
Cornwallis	2,701	Akpatok	349
Amund Ringnes	2,029	Salisbury	311
Mackenzie King	1,949	Big	310
Borden	1,079	White	305
Cornwall	872	Loks Land	162
Eglinton	595		
Graham	532	PACIFIC COAST	
Lougheed	505	Vancouver	12,079
Byam Martin	444	Graham	2,456
Ile Vanier	435	Moresby	1,007
Cameron	409	Princess Royal	869
Meighen	369	Pitt	531
Brook	295	Banks	382
King Christian	249	King	312
North Kent	228	Porcher	201
Emerald	212	Nootka	197
Alexander	187	Aristazabal	162
Massey	167	Gilford	148
Little Cornwallis	159	Hawkesbury	141
ARCTIC ISLANDS SOUTH OF QUEEN ELIZABETH ISLANDS		Hunter	140
Victoria	83,896	Calvert	127
Banks	27,038	Texada	116
Prince of Wales	12,872	Swindle	110
Somerset	9,570	McCauley	106
King William	5,062	Louise	106
Bylot	4,273	Quadra	104
Prince Charles	3,676	ATLANTIC COAST	
Stefansson	1,723	Newfoundland and Labrador	
Richards	836	Newfoundland (main island)	42,031
Air Force	664	South Aulatsivik	176
Wales	439	Killinek	104
Rowley	421	Fogo	98
Russell	363	Random	96
Jens Munk	355	New World	73
Langley and Ellice	301	Tunungayualok	72
Bray	266	West Okak	69
Foley	246	Paul	69
Royal Geographical Society Islands	235	Gulf of St. Lawrence	
Sillem	186	Cape Breton	3,981
Matty	184	Anticosti	3,066
Spicer Islands	177	Prince Edward	2,184
Koch	177	Boularderie	74
Jenny Lind	162	Shippegan	58
Prescott	159	Bay of Fundy	
Crown Prince Frederick	155	Grand Manan	53

1.7 Temperature and precipitation data for typical stations in various districts

District and station	Temperatures (Celsius)				Av. dates of freezing temperatures (0°C or lower)		Precipitation		
	Mean Jan.	Mean July	Highest on record	Lowest on record			Total (all forms) mm	Snowfall cm	Av. num- ber of days (all forms)
					Last in spring	First in autumn			
NEWFOUNDLAND									
Island									
Belle Isle	-9.6	9.4	22.8	-35.0	June 21	Sept. 26	893.1	240.0	149
Gander A	-6.1	16.5	35.6	-27.2	June 4	Oct. 5	1078.2	354.8	204
St. Andrew's	-3.6	15.0	27.2	-23.9	June 3	Sept. 24	1112.3	196.3	176
St. John's A	-3.8	15.3	30.6	-23.3	June 3	Oct. 12	1511.5	360.7	210
Labrador									
Cartwright	-13.1	12.9	36.1	-37.8	June 20	Sept. 9	946.4	433.8	179
Goose A	-16.3	15.8	37.8	-38.9	June 6	Sept. 17	876.8	409.2	176
MARITIME PROVINCES									
Prince Edward Island									
Charlottetown A	-6.7	18.4	34.4	-27.8	May 17	Oct. 15	1127.8	305.1	169
Nova Scotia									
Annapolis Royal	-3.9	18.3	32.8	-27.2	May 19	Oct. 2	1204.5	218.2	149
Halifax	-3.2	18.3	34.4	-25.0	May 1	Nov. 1	1318.8	210.8	152
Sydney A	-4.4	17.9	35.0	-25.0	May 23	Oct. 16	1340.9	288.0	179
Yarmouth A	-2.7	16.4	30.0	-21.0	May 2	Oct. 24	1283.2	204.5	157

1.7 Temperature and precipitation data for typical stations in various districts (continued)

District and station	Temperatures (Celsius)						Precipitation		
	Mean Jan.	Mean July	Highest on record	Lowest on record	Av. dates of freezing temperatures (0°C or lower)		Total (all forms) mm	Snowfall cm	Av. number of days (all forms)
					Last in spring	First in autumn			
MARITIME PROVINCES (concluded)									
New Brunswick									
Chatham A	-9.3	19.2	37.8	-35.0	May 22	Sept. 21	1051.2	309.4	152
Grand Falls	-11.9	18.3	36.7	-43.3	May 24	Sept. 21	1021.6	265.2	105
Moncton A	-7.9	18.6	37.2	-32.2	May 23	Sept. 23	1099.3	313.7	156
Saint John A	-7.4	16.9	34.4	-33.3	May 18	Oct. 2	1400.3	204.7	149
QUEBEC									
Northern									
Fort Chimo A	-23.4	11.4	32.2	-46.7	June 27	Aug. 30	483.8	236.7	155
Inoucdjouac (Port Harrison)	-24.7	8.9	30.0	-46.1	July 1	Sept. 4	355.6	122.9	133
Nitchequon	-22.9	13.6	32.2	-49.4	June 13	Sept. 13	764.5	284.7	192
Schefferville A	-22.7	12.6	31.7	-50.6	June 18	Aug. 31	722.5	335.5	188
Southern									
Bagotville A	-15.7	17.8	35.6	-43.3	May 26	Sept. 18	936.6	341.6	177
Montreal McGill	-8.9	21.6	36.1	-33.9	Apr. 22	Oct. 23	999.0	243.1	164
Pointe au Père	-10.9	15.4	32.2	-36.1	May 19	Sept. 28	848.6	285.8	135
Quebec A	-11.6	19.2	35.6	-36.1	May 18	Sept. 28	1088.6	326.6	164
Sept Îles A	-13.9	15.1	32.2	-43.3	May 30	Sept. 17	1090.3	423.2	146
Sherbrooke	-9.6	20.1	36.7	-41.1	May 12	Sept. 27	972.6	244.6	170
ONTARIO									
Northern									
Kapuskasing A	-18.2	17.0	36.1	-44.4	June 13	Sept. 5	871.5	321.8	186
Sioux Lookout A	-18.7	18.4	35.6	-46.1	May 29	Sept. 20	741.5	236.7	165
Thunder Bay A	-14.8	17.5	35.6	-41.1	May 31	Sept. 10	738.5	222.0	141
Trout Lake	-24.1	15.9	35.6	-47.8	June 11	Sept. 16	597.3	212.3	158
Southern									
London A	-6.0	20.5	36.7	-31.7	May 9	Oct. 6	924.5	201.2	165
Ottawa A	-10.9	20.7	37.8	-36.1	May 11	Oct. 1	850.9	215.6	152
Parry Sound	-9.5	19.3	37.8	-41.1	May 14	Oct. 2	1020.1	296.7	158
Toronto	-4.4	21.8	40.6	-32.8	Apr. 20	Oct. 30	789.9	141.0	134
Windsor A	-4.3	22.3	38.3	-26.1	Apr. 29	Oct. 20	836.1	103.6	137
PRAIRIE PROVINCES									
Manitoba									
Churchill A	-27.6	12.0	32.8	-45.0	June 22	Sept. 12	396.6	183.9	141
The Pas A	-22.4	17.9	36.7	-49.4	May 28	Sept. 20	449.7	157.2	128
Winnipeg A	-18.3	19.7	40.6	-45.0	May 25	Sept. 21	535.2	131.3	121
Saskatchewan									
Regina A	-17.3	18.9	43.3	-50.0	May 27	Sept. 12	397.9	114.8	114
Saskatoon A	-18.7	18.8	40.0	-47.8	May 27	Sept. 15	352.6	112.5	103
Swift Current A	-13.9	18.7	38.9	-42.8	May 28	Sept. 19	389.9	123.7	112
Alberta									
Beaverlodge CDA	-14.9	15.6	36.7	-47.8	May 22	Sept. 7	454.7	183.6	129
Calgary A	-10.9	16.5	36.1	-45.0	May 28	Sept. 12	437.1	153.9	113
Edmonton Ind. A	-14.7	17.5	34.4	-48.3	May 14	Sept. 19	446.5	132.1	121
Medicine Hat A	-12.1	20.2	42.2	-46.1	May 17	Sept. 20	347.8	121.7	89
BRITISH COLUMBIA									
Pacific Coast and Coastal Valleys									
Estevan Point	4.5	13.8	28.9	-13.9	Apr. 5	Nov. 18	3027.9	34.3	203
Langara	2.5	12.4	25.6	-14.4	Apr. 3	Nov. 26	1675.6	24.1	248
Prince Rupert	1.8	13.6	32.2	-21.1	Apr. 19	Nov. 5	2414.5	113.0	227
Vancouver A	2.4	17.4	33.3	-17.8	Mar. 31	Oct. 30	1068.1	52.3	161
Victoria									
Gonzale Hts	4.1	15.7	35.0	-15.6	Feb. 28	Dec. 9	657.1	32.8	142
Southern Interior									
Glacier	-11.3	14.4	36.7	-35.6	June 12	Sept. 6	1492.8	969.5	192
Kamloops A	-6.0	20.9	39.4	-37.2	May 5	Sept. 28	260.6	77.0	90
Penticton A	-2.9	20.1	40.6	-27.2	May 10	Oct. 1	296.2	69.1	100
Princeton A	-8.1	17.6	41.7	-42.8	June 3	Sept. 12	359.1	157.0	115
Central Interior									
Barkerville	-9.8	12.3	35.6	-46.7	June 29	Aug. 18	1148.8	581.4	185
McBride	-9.1	15.9	37.8	-45.6	June 9	Sept. 1	524.5	197.4	128
Prince George A	-11.8	14.9	34.4	-50.0	June 10	Aug. 28	620.7	233.4	162
Smithers A	-10.6	14.6	33.9	-43.9	June 10	Sept. 1	512.2	197.4	158
Northern Interior									
Atlin	-16.6	12.6	30.6	-50.0	June 5	Aug. 28	283.2	121.4	86
Dease Lake	-19.3	12.6	33.9	-51.1	June 29	Aug. 13	394.5	186.7	143
Fort Nelson A	-23.2	16.7	36.7	-51.7	May 24	Sept. 5	446.4	191.5	130
Fort St. John A	-17.2	15.9	33.3	-47.2	May 20	Sept. 9	449.8	206.2	128
Smith River A	-24.5	14.1	33.3	-58.9	June 21	Aug. 11	465.3	211.6	148
YUKON TERRITORY									
Dawson	-28.6	15.5	35.0	-58.3	May 26	Aug. 27	325.5	136.4	120
Snag A	-28.2	13.9	31.7	-62.8	June 18	Aug. 9	359.7	140.5	118
Watson Lake A	-25.3	14.9	33.9	-58.9	May 30	Sept. 3	432.3	227.3	153
Whitehorse A	-18.9	14.1	34.4	-52.2	June 5	Sept. 1	260.3	127.8	118

1.7 Temperature and precipitation data for typical stations in various districts (concluded)

District and station	Temperatures (Celsius)				Av. dates of freezing temperatures (0°C or lower)		Precipitation		
	Mean Jan.	Mean July	Highest on record	Lowest on record			Total (all forms) mm	Snowfall cm	Av. number of days (all forms)
					Last in spring	First in autumn			
NORTHWEST TERRITORIES									
Mackenzie Basin									
Fort Good Hope	-31.0	15.9	34.4	-55.6	June 3	Aug. 19	283.7	124.0	101
Fort Simpson A	-27.6	16.1	33.9	-53.3	May 31	Aug. 29	343.2	137.9	126
Hay River A	-25.5	15.6	33.9	-48.3	June 6	Sept. 11	339.8	165.1	109
Barrens									
Baker Lake	-33.6	10.7	27.8	-50.0	June 25	Aug. 31	213.0	88.9	96
Chesterfield	-31.8	8.7	30.0	-51.1	June 29	Sept. 6	263.5	112.8	98
Coppermine	-29.4	9.3	32.2	-50.0	June 27	Aug. 21	216.3	101.9	110
Arctic Archipelago									
Clyde	-26.9	4.6	22.2	-45.6	July 13	July 18	206.3	152.9	94
Eureka	-36.6	5.5	19.4	-53.3	June 27	Aug. 5	58.4	38.4	52
Frobisher Bay A	-26.2	7.9	24.4	-45.6	June 30	Aug. 29	415.2	246.9	135
Mould Bay	-33.8	3.7	15.6	-53.9	July 12	July 19	86.4	59.9	73
Resolute A	-32.6	4.3	18.3	-52.2	July 10	July 20	136.4	78.7	94

A = Airport, Ind. A = Industrial Airport.
CDA = Canada Department of Agriculture.

1.8 Total area classified by tenure, 1974 (sq miles)

Item	Province or territory						
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.
Federal Crown lands other than national parks, Indian reserves and forest experiment stations	168	6	70	575	476 ¹	447	99
National parks	903	7	514	167	303	742	1,149
Indian reserves	—	3	44	65	300	2,588	827
Federal forest experiment stations	—	—	—	35	7	40	—
Privately owned land or land in process of alienation from the Crown	6,847	1,995	14,645	15,339	43,500	45,955	55,875
Provincial or territorial lands other than provincial parks and provincial forests	148,043	112	1,023	11,012	468,796	344,496	184,241 ^a
Provincial parks	107	6	31	83	75,000	18,314	3,390
Provincial forests	117	55	5,098	1,078	6,478	—	5,419
Total area	156,185	2,184	21,425	28,354	594,860	412,582	251,000
	Sask.	Alta.	BC	YT	NWT	Canada	
Federal Crown lands other than national parks, Indian reserves and forest experiment stations	2,105	1,177	349	198,159	1,287,251	1,490,882	
National parks	1,496	20,692 ^a	1,811	8,500	16,450 ^a	52,734	
Indian reserves	2,196	2,549	1,309	2	52	9,935	
Federal forest experiment stations	—	23	—	—	—	105	
Privately owned land or land in process of alienation from the Crown	95,586	77,801	21,039	65	28	378,675	
Provincial or territorial lands other than provincial parks and provincial forests	13,937	—	208,684	350	1,122	1,381,816	
Provincial parks	1,857	2,399	14,740	—	—	115,927	
Provincial forests	134,523	150,644 ^a	118,323	—	—	421,735	
Total area	251,700	255,285	366,255	207,076	1,304,903	3,851,809	

¹Includes Gatineau Park (137.5 sq miles) and Quebec Battlefields Park (0.36 sq mile) which are under federal jurisdiction but are not technically National Parks.
²Includes 2,220 sq miles under lease.
³Includes that part of Wood Buffalo Park in Alberta (13,840 sq miles).
⁴Includes that part of Wood Buffalo Park in Northwest Territories (3,460 sq miles).
⁵Includes some privately owned land and other provincial lands.

Sources

1.1, 1.2, 1.6 Topographical Survey Directorate, Surveys and Mapping Branch, Department of Energy, Mines and Resources.
1.3, 1.4 *Inventory of Canadian freshwater lakes*, Inland Waters Directorate, Water Resources Branch, Department of the Environment.
1.5, 1.7 Information Services Directorate, Department of the Environment.
1.8 Property Services Branch, Department of Public Works; Parks Canada, Department of Indian Affairs and Northern Development; Canadian Forestry Service, Dept. of the Environment; and respective provincial government departments.

Chapter 2

The Constitution and the legal system

As the society of a country becomes more highly developed, the body of law, in response to the changing needs of its citizens, becomes more complex. This Chapter attempts to show some of the features of the Canadian legal system, particularly those which have a federal concern. The Canadian Constitution, the major written aspects of which are contained in the British North America Act, is considered in some detail, followed by a discussion of the distribution of legislative power between the federal and provincial governments. There are also short notes on the Canadian legal system, the development of Canadian criminal law, the courts and the judiciary, the legal profession and the federal legal aid scheme. There is a description of the organization and work of the federal Department of Justice. Information concerning the enforcement of the criminal law and on correctional institutions is set out in the concluding sections.

2.1 The Constitution

The Canadian federal state of 10 provinces and two territories, as we know it today, had its foundation in an Act of the British Parliament, the British North America Act, 1867, which was fashioned for the most part from the Seventy-two Resolutions drafted by the Fathers of Confederation at Quebec in 1864. That Act provided for the federal union of the three British North American Provinces — Canada (Ontario and Quebec), Nova Scotia and New Brunswick — into one Dominion under the name Canada. The country that was brought into existence on proclamation of the BNA Act on July 1, 1867 consisted of only four of its present provinces, Ontario, Quebec, New Brunswick and Nova Scotia. However, Section 146 of the Act made provision for the possible future entry into Confederation of the colonies or provinces of Newfoundland, Prince Edward Island and British Columbia, and of Rupert's Land and the North-Western Territory, a vast expanse of territory then held by the Hudson's Bay Company. In 1870, the Company surrendered its territories to the British Crown which transferred them at once to Canada. In exchange it received a cash payment from the Canadian government of £300,000, one twentieth of the lands in the southern part, "the fertile belt", of the territory, and designated blocks of land around its trading posts. From this new territory was carved the province of Manitoba in 1870 which was much smaller at its inception than at present, and later, in 1905, the provinces of Saskatchewan and Alberta. British Columbia entered Confederation in 1871 on the condition that a railway linking it with eastern Canada be commenced within two years. Despite the original provision in the BNA Act for their entry into Canada, it was not until 1873 that Prince Edward Island entered the Union, and much later, 1949, that Newfoundland became part of Canada (see Table 2.1).

Although the BNA Act of 1867 and its amendments contain a substantial portion of Canada's Constitution, and is popularly referred to as the Constitution, it is not a comprehensive constitutional document presenting an exhaustive statement of fundamental laws and rules by which Canada is governed. There are unwritten parts which are of equal importance such as common law, convention and usage which were transplanted from Great Britain over 200 years ago and which are fundamental to the Canadian style of democratic government. Among these are the principles governing the Cabinet system of responsible government with its close identification and functioning of executive and legislative branches.

The Constitution of Canada, in its broadest sense, also includes other British statutes (Statute of Westminster — 1931) and British Orders in Council (those admitting various provinces and territories to the federation); statutes of the Parliament of Canada pertaining to such matters as succession to the Throne, the Royal Style and Title, the Governor General, the Senate, the House of Commons, the creation of courts, the franchise and elections; as well as judicial decisions that interpret the BNA Act and other statutes of a constitutional nature. Moreover, the constitutions of the provinces of Canada form part of the over-all Canadian Constitution, and provincial acts which are of a fundamental constitutional nature similar to those listed above would also be considered part of the Constitution. The same can be said of both federal and provincial Orders in Council that are of a similar fundamental nature.

Although the essential principles of Cabinet government are based on custom or constitutional usage, the federal structure of Canadian government rests on the explicit written provisions of the BNA Act. Apart from the creation of the federal union, the dominant feature of the Act, and indeed of the Canadian federation, was the distribution of powers between the central or federal government on the one hand and the component provincial governments on the other. In brief, the primary purpose was to grant to the Parliament of Canada legislative jurisdiction over all subjects of general or common interest, while giving to the provincial legislatures jurisdiction over all matters of local or particular interest.

Unlike the written constitutions of many nations, the BNA Act lacks comprehensive "bill of rights" clauses, although it does accord specific constitutional protection to the use of the English and French languages (Sect. 133) and special safeguards with respect to sectarian or denominational schools. Freedom of speech, freedom of assembly, freedom of religion, freedom of the press, trial by jury and similar liberties enjoyed by the individual citizen are not recorded in the BNA Act but rather depended on the statute law and the common law inheritance until these rights were confirmed, as far as federal law is concerned, by the passage of a Canadian Bill of Rights — An Act for the Recognition and Protection of Human Rights and Fundamental Freedoms (SC 1960, c.44) assented to August 10, 1960.

The right to use either the English or the French language in the House of Commons, the Senate or the federal courts is constitutionally guaranteed by Section 133 of the BNA Act. The use of the English and French languages in the administration of the Government of Canada is dealt with in the Official Languages Act (RSC 1970, c.O-2). That Act provides that government notices to the public, certain orders and regulations, and final decisions of federal courts are to be made or issued in both languages and that, in the National Capital Region and in federal bilingual districts, government services are to be available in both languages. The Commissioner of Official Languages for Canada is responsible for ensuring compliance with this Act.

Amendment of the Constitution. No provision was made in the BNA Act of 1867 for its amendment by any legislative body in Canada but both the Parliament of Canada and the provincial legislatures were given legislative jurisdiction with respect to some matters relating to government. Thus, for example, the Parliament of Canada was given jurisdiction with respect to the establishment of electoral districts and election laws and the privileges and immunities of members of the House of Commons and the Senate. Each provincial legislature was empowered to amend the Constitution of its province except as regards the office of Lieutenant Governor. Amendments to the BNA Act have been made by the British Parliament on 14 occasions since 1867. By an amendment to the BNA Act passed in 1949, the authority of the Parliament of Canada to legislate with respect to constitutional matters was considerably enlarged and it may now amend the Constitution of Canada except as regards the legislative authority of the provinces, the rights and privileges of provincial legislatures or governments, schools, the use of the English or the French language and provides that no House of Commons shall continue for more than five years other than in time of real or apprehended war, invasion or insurrection.

The search for a satisfactory procedure for amending the Constitution totally within Canada which satisfies the need to safeguard basic provincial and minority rights and yet possesses sufficient flexibility to ensure that the Constitution can be altered to meet changing circumstances has been the subject of repeated consideration in the Parliament of Canada as well as in a series of federal-provincial conferences and meetings held in 1927, 1935-36, 1950 and 1960-61. In October 1964 the text of a draft bill "to provide for the amendment in Canada of the Constitution of Canada", which embodied an amending procedure or formula, recommended by a Conference of Attorneys General, was unanimously accepted by a Conference of the Prime Minister and the Premiers. However, Quebec subsequently withdrew its approval of the formula and it was never adopted.

Between February 1968 and June 1971, eight federal-provincial conferences were held to study the drafting of a new Constitution. A committee of officials was established to provide assistance in the study of constitutional questions. The provincial governments, with one exception, and the federal government submitted proposals for a new Constitution. The discussions culminated in the drafting of the Canadian Constitutional Charter, 1971, which set out specific constitutional reforms, including a revised amendment procedure. The Charter

was considered at the Constitutional Conference in Victoria, BC in June 1971, but was not accepted.

Treaty-making powers. The federal government has exclusive responsibility for the conduct of external affairs. The policy of the federal government in discharging this responsibility is to promote the interest of the entire country and of all Canadians.

In matters of specific concern to the provinces, it is the policy of the Canadian government to do its utmost to assist them in achieving their particular aspirations and goals. The attitude of the federal government in this respect was illustrated by the "entente" signed by representatives of Quebec and France in the field of education in February 1965. Provincial and federal authorities co-operated actively in a procedure that enabled Quebec, within the framework of the Constitution and the national policy, to participate in international arrangements in a field of particular interest to that province.

Thus, under existing procedures, once it is determined that what a province wishes to achieve through agreements in the field of provincial jurisdiction falls within the framework of Canadian foreign policy, the provinces may discuss detailed arrangements direct with the competent authorities of the country concerned. When a formal international agreement is to be concluded, however, the federal powers relating to the signature of treaties and the conduct of over-all foreign policy must necessarily come into operation.

2.2 Distribution of federal and provincial powers

Inasmuch as the purpose of the BNA Act was to create a federal system of government, some of the most important provisions of that document deal with the division of powers between the federal and provincial governments. These powers cover the whole area of government in Canada and each level of government is sovereign with respect to the powers it exercises. Hence, provincial governments, when acting within their jurisdiction as set out in the BNA Act, are as sovereign as the federal government when acting within its spheres of power.

The primary scheme of the distribution of powers between the federal and provincial governments was to grant to the federal government jurisdiction over all subjects of general or national concern while giving to provincial legislatures jurisdiction over all matters of a local nature. Section 91 of the BNA Act lists federal powers. It gives the Parliament of Canada a general power to "make laws for the peace, order and good government of Canada" and then gives a list of classes of subjects over which Parliament has exclusive authority which illustrate but do not restrict the general power. The list contains 31 classes of federal powers such as regulation of trade and commerce, defence, currency, raising money by any mode or system of taxation, postal services, navigation and shipping, weights and measures and criminal law. Section 92 assigns specific areas of power to the provinces including the power to legislate regarding direct taxation within the province, the management and sale of public lands and timber belonging to the province, municipal institutions, laws relating to property and civil rights and all matters of a merely local nature. (For details see *1973 Canada Year Book* pp 71-73.) Section 95 of the BNA Act gave the federal government and the provinces concurrent powers over agriculture and immigration but federal law prevails in cases where the laws of both levels of government are in conflict.

The drafters of the BNA Act in 1867 probably thought that such a division of powers was so definite and precise that no future difficulties would arise in deciding what subjects were under federal legislative control and what subjects were under provincial legislative control. However, the powers enumerated in Sections 91 and 92 are not mutually exclusive and sometimes overlap. As a result, the interpretation to be placed on the division of powers between the federal and provincial governments has given rise to innumerable legal disputes, parliamentary discussions, royal commission inquiries and federal-provincial conferences. Often, however, the division of powers has remained unclear.

Difficulty in interpreting the division of powers has also arisen as a result of new social, technological and political conditions that were unforeseen at the time of Confederation. Social welfare legislation, such as unemployment insurance, and legislation concerning modern communication facilities were not contemplated by the drafters of the BNA Act. Nevertheless, power to legislate on these subjects had to be assigned either to the federal or provincial governments by reference to the BNA Act. Canada's emergence into the international community as a completely independent nation, which also was not foreseen in 1867, required

bringing new concepts such as Canadian citizenship into the BNA Act and assigning responsibility for them to one of the levels of government.

One significant outcome of the allocation of powers under the BNA Act has been that the expenditures of the provincial governments have outstripped their tax resources. In 1867, the provinces were assigned responsibility for social services such as hospitals and schools as well as for municipal institutions. At that time these responsibilities did not involve major expenditures of public funds. However, changing demands of society and the consequent entry of governments into fields of social welfare have led to the expenditure of large sums for these purposes. The provinces have power to levy “direct taxation within the province” while the federal government has a broader authority to levy taxes by “any means of taxation”. The federal government has exercised its broad taxing powers and therefore has substantial tax resources. On the other hand, while the provinces have responsibility for public institutions which are costly to operate, they do not have sufficient fiscal resources for these purposes. In order to redress this imbalance, numerous federal-provincial tax-sharing agreements and shared-cost programs have been entered into by the federal and provincial governments. Such agreements were of course not contemplated by the original drafters of the BNA Act. Nevertheless those agreements have resulted in new constitutional arrangements and techniques for dealing with federal-provincial economic relations which have come to be known collectively as “co-operative federalism”.

2.3 The legal system

2.3.1 Common law and Quebec civil law

With one exception, in all the provinces as well as in the two territories, the legal system derives from the common law system of England. The exception is Quebec where the system has been influenced by the legal developments of France. Quebec has its own Civil Code and Code of Civil Procedure. Over the years, both Canadian common law and Quebec civil law have developed unique characteristics. The body of law changes as society changes. In many of the provinces there are now Law Reform Commissions which have been charged with the function of inquiring into matters relating to the reform of the law having regard to both the statute law and the common law. A general revision of the Civil Code is taking place in Quebec under the auspices of the Civil Code Revision Office. At the federal level there is the Law Reform Commission of Canada whose purpose is “to study and keep under review on a continuing basis the statutes and other laws comprising the law of Canada with a view to making recommendations for their improvement, modernization and reform”.

2.3.2 Criminal law

Criminal law is that branch or division of law which treats of crimes and their punishment. A crime may be described as an act against society, as distinct from a dispute between individuals. It has been defined as any act done in violation of those duties which an individual owes to the community and for the breach of which the law has provided that the offender shall make restitution to the public.

The criminal law of Canada has as its foundation the criminal common law of England built up through the ages and consisting first of customs and usages and later expanded by principles enunciated by generations of judges. There is no statutory declaration of the introduction of English criminal law into those parts of Canada that are now New Brunswick, Nova Scotia and Prince Edward Island. Its introduction there depends upon a principle of the common law itself by which English law was declared to be in force in uninhabited territory discovered and planted by British subjects, except in so far as local conditions made it inapplicable. The same may be said of Newfoundland although the colony dealt with the subject in a statute of 1837. In Quebec, its reception depends upon a Royal Proclamation of 1763 and the Quebec Act of 1774. In each of the other provinces and in the Yukon Territory and Northwest Territories, the matter has been dealt with by statute.

The judicial systems of the provinces as they exist today are based on the British North America Act of 1867. Section 91 of the Act provides that “The exclusive legislative authority of the Parliament of Canada extends to ... the criminal law, except the constitution of courts of criminal jurisdiction but including the procedure in criminal matters”. By Section 92(14), the legislature of the province exclusively may make laws in relation to “the Administration of

Justice in the Province, including the Constitution, Maintenance, and Organization of Provincial Courts, both of Civil and Criminal Jurisdiction and including Procedure in Civil Matters in those Courts". The Parliament of Canada may, however (Sect. 101), establish any additional courts for the better administration of the laws of Canada. It should be noted that the Statute of Westminster, 1931 effected important changes, particularly by abrogating the Colonial Laws Validity Act, 1865 (Br.) and confirming the right of a Dominion to make laws having extraterritorial operation.

At the time of Confederation each of the colonies affected had its own body of statutes relating to the criminal law. In 1869, in an endeavour to assimilate them into a uniform system applicable throughout Canada, Parliament passed a series of acts, some of which dealt with offences of special kinds and others with procedure. Most notable of the latter was the Criminal Procedure Act, but other acts provided for the speedy trial or summary trial of indictable offences, the powers and jurisdiction of justices of the peace in summary conviction matters and otherwise, and the procedure in respect of juvenile offenders.

Codification of the criminal law through a Criminal Code Bill founded on the English draft code of 1878, Stephen's *Digest of criminal law*, Burbidge's *Digest of the Canadian criminal law*, and the relevant Canadian statutes was brought about by the Minister of Justice, Sir John Thompson, in 1892. This Bill became the Criminal Code of Canada and came into force on July 1, 1893. It must be remembered, however, that the criminal code was not exhaustive of the criminal law. It was still necessary to refer to English law in certain matters of procedure and it was still possible to prosecute for offences at common law. Moreover, Parliament has declared offences against certain other acts, e.g. the Narcotic Control Act, to be criminal offences.

An examination and study of the criminal code was authorized by Order in Council dated February 3, 1949, and the Commission which had been assigned the task of revising the code presented its report with a draft bill in February 1952. After coming before successive sessions of Parliament it was finally enacted on June 15, 1954 and the new Criminal Code SC 1953-54, c.51 (now RSC 1970, c.C-34) came into effect on April 1, 1955. Since the new code came into force a number of important amendments have been made. These include an amendment in 1956 providing that motions for leave to appeal to the Supreme Court of Canada in criminal cases should be heard by a quorum of at least five judges of that Court instead of by a single judge; amendments effected in 1959, providing a statutory extension of the definition of "obscenity" and making provision for seizure and condemnation of offending material without a charge necessarily being laid against any person; amendments dealing with genocide and public incitement of hatred; extensive amendments relating to the allowing of time for payment of fines; amendments dealing with offences committed in aircraft in flight over the high seas; important and extensive amendments relating to the invasion of privacy and interception of communications; and an amendment forbidding the publication in a newspaper or broadcast of a report that any admission or confession tendered in evidence at a preliminary inquiry or a report of the nature of such admission or confession unless the accused has been discharged or, if the accused has been committed for trial, the trial has ended. (In 1969 a new amendment laid down that the accused may apply to the magistrate or justice holding a preliminary inquiry for an order forbidding publication of any of the evidence until the accused has been discharged or the trial itself has ended.)

It is most important to note that in 1960 (SC 1960, c.44) Parliament enacted what is known as the Canadian Bill of Rights. Although the Act sets out further details, its general scope appears in Section 1, which reads as follows: "It is hereby recognized and declared that in Canada there have existed and shall continue to exist without discrimination by reason of race, national origin, colour, religion or sex, the following human rights and fundamental freedoms, namely, (a) the right of the individual to life, liberty, security of the person and enjoyment of property, and the right not to be deprived thereof except by due process of law; (b) the right of the individual to equality before the law and the protection of the law; (c) freedom of religion; (d) freedom of speech; (e) freedom of assembly and association; and (f) freedom of the press."

Although the Bill of Rights has been invoked on various occasions, the courts have not held it to affect the operation of the criminal code.

In 1961 the offence of murder was divided into capital and non-capital, the death penalty was abolished in relation to the offence of non-capital murder, and the term "criminal sexual

psychopath” was dropped and the term “dangerous sexual offender” substituted; in 1965 provision was made for the right to appeal in habeas corpus proceedings.

The concept of “non-capital murder” was introduced into Canadian criminal law in 1961. At that time, capital murder was defined to include, for example, planned and deliberate murder, murder in the course of certain violent acts and murder of peace officers and prison officers. Life imprisonment was substituted for the death penalty in cases where the accused was convicted of non-capital murder.

In 1966 the House of Commons, in a free vote, rejected a bill under which the death penalty for murder would have been completely abolished. The next year, in 1967, an Act was passed under which the definition of capital murder was restricted to the murder of police officers or prison officers. This Act was brought into force on December 29, 1967, and continued in force for a period of five years from that day. The Act then expired and was replaced by one brought into force on January 1, 1974. The new Act retains the 1967 restrictive definition of capital murder, this time using the term “murder punishable by death”, for a period of four years ending December 31, 1977.

Some very comprehensive amendments to the criminal code are contained in the Criminal Law Amendment Act which was assented to on June 27, 1969 and, with certain exceptions, came into force on August 26, 1969. Among the changes were amendments relating to gaming and lotteries, “drinking and driving”, homosexual acts and therapeutic abortion. It also affected the law relating to the publication of evidence, as mentioned above, as well as the law relating to the issue of fitness to stand trial on the grounds of insanity.

In 1971 Parliament passed the Bail Reform Act which changed the criminal code by restricting police power of arrest for minor offences and requiring the police, as a general rule, to release persons arrested for minor or less serious offences as soon as possible. In addition, a justice is required to issue a summons unless the public interest requires a warrant of arrest. Save in very exceptional cases “cash bail” was abolished and, as a general rule, a person charged with an offence will be released simply on his written undertaking to attend court.

In 1972 the Criminal Law Amendment Act introduced a wide variety of reforms. Rules regarding jury duty were changed and men and women were made equally eligible and responsible to serve. The possibility of more flexible and appropriate law enforcement was enhanced by providing that individuals accused of certain kinds of crimes, such as obstructing the police, could be tried either by summary conviction or indictment. New offences were created with regard to hijacking and endangering the safety of aircraft, to soliciting for the purpose of prostitution by either male or female and to disturbing the peace of an apartment building. The offences of vagrancy and attempted suicide were abolished. Important changes were introduced with respect to sentencing — maximum sentences were increased for certain crimes connected with the administration of justice, whipping was abolished, and provision was made to permit a judge not to sentence an accused found guilty if the public interest would not be served by sentencing him. Provision was made to permit jail sentences under 90 days to be served at night and on weekends so that the individual might continue to earn a living and support his family. Where an accused is found guilty of certain minor offences, the Court, where it feels it is in the best interests of the accused and is not contrary to the public interest, may order that the accused be discharged either absolutely or upon conditions prescribed in a probation order. Speaking generally, a discharged accused is deemed not to have been convicted. However, should an accused conditionally discharged subsequently be convicted of an offence, the Court may revoke the discharge and convict him of the offence to which the discharge relates.

In 1974, the Protection of Privacy Act amended the criminal code by creating an offence where a person listens to, records or acquires a private communication. Provision is made for peace or public officers obtaining authorization from a judge to intercept such communications, for the manner in which the person whose private communication is being lawfully intercepted is to be informed of this fact, and for the way in which such intercepted communications may be used in evidence.

2.4 Courts and the judiciary

2.4.1 The federal judiciary

The Parliament of Canada is empowered by Section 101 of the British North America Act from time to time to provide for the constitution, maintenance and organization of a general

Court of Appeal for Canada and for the establishment of any additional courts for the better administration of the laws of Canada. Under this provision, Parliament has established the Supreme Court of Canada, the Federal Court of Canada and certain miscellaneous courts.

Supreme Court of Canada. This Court, first established in 1875 and now governed by the Supreme Court Act (RSC 1970, c.S-19), consists of a chief justice, who is called the Chief Justice of Canada, and eight puisne judges. The Chief Justice and the puisne judges are appointed by the Governor in Council and hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. They cease to hold office on attaining the age of 75 years. The Court sits at Ottawa and exercises general appellate jurisdiction throughout Canada in civil and criminal cases. The Court is also required to consider and advise on questions referred to it by the Governor in Council and it may also advise the Senate or the House of Commons on private bills referred to the Court under any rules or orders of the Senate or of the House of Commons.

Appeals may be brought from any final judgment of the highest court of final resort in a province by obtaining leave to do so from that court or from the Supreme Court itself. The Supreme Court may grant leave to appeal from any judgment whether final or not, and as well there is provision for *per saltum* appeals whereby the highest court of final resort in a province may grant leave on a question of law alone from a final judgment of some other court in that province. Appeals in respect of indictable offences are regulated by the criminal code. Appeals from federal courts are regulated by the statute establishing such courts. The judgment of the Supreme Court of Canada in all cases is final and conclusive.

Chief Justice and Judges of the Supreme Court of Canada as at December 31, 1974

Chief Justice of Canada, Rt. Hon. Mr. Bora Laskin (*appointed December 27, 1973, first appointed a Judge of the Supreme Court, March 23, 1970*)

Hon. Mr. Justice Ronald Martland (*appointed January 15, 1958*)

Hon. Mr. Justice Wilfrid Judson (*appointed February 5, 1958*)

Hon. Mr. Justice Roland Almon Ritchie (*appointed May 5, 1959*)

Hon. Mr. Justice Wishart Flett Spence (*appointed May 30, 1963*)

Hon. Mr. Justice Louis-Philippe Pigeon (*appointed September 21, 1967*)

Hon. Mr. Justice Robert George Brian Dickson (*appointed March 26, 1973*)

Hon. Mr. Justice Joseph Philemon Jean Marie Beetz (*appointed January 1, 1974*)

Hon. Mr. Justice Roland Chamilly Louis-Philippe de Grandpré (*appointed January 1, 1974*).

Federal Court of Canada. The Federal Court of Canada was constituted by Act of the Parliament of Canada under Section 101 of the British North America Act, 1867, which, after authorizing the creation of the Supreme Court of Canada, confers on the Parliament of Canada authority to constitute other courts for the better administration of the laws of Canada. The Federal Court of Canada is a court of law, equity and admiralty and it is a superior court of record having civil and criminal jurisdiction (Sect. 3 of the Act). It was established in 1875 as the Exchequer Court of Canada, which it replaced in December 1970 (SC 1970-71, c.1).

The Court has two divisions called the Federal Court — Appeal Division, and the Federal Court — Trial Division. The Appeal Division may be called the Court of Appeal or Federal Court of Appeal (Sect. 4 of the Act). The Court of Appeal consists of the Chief Justice of the Federal Court of Canada and five other judges. The Trial Division consists of the Associate Chief Justice of the Federal Court of Canada and nine other judges. Every judge is an *ex officio* member of the Division of which he is not a regular member (Sect. 5). In addition to the establishment of full-time judges, an added capacity to cope with the purely judicial work of the Court is provided by the authority to invite retired federally appointed judges to act as Deputy Judges of the Court (Sect. 10). This authority extends also to federally appointed judges who are still in office, but only with the consent of the appropriate Chief Justice or Attorney General. Former district judges in Admiralty are also Deputy Judges of the Court and their services can be utilized on a limited basis (Sect. 60(3)).

Provision is also made in the Act for quasi-judicial officers called prothonotaries (Sect. 12). Their duties are defined by the rules and may be of a judicial nature (Sect. 46(1)(h)). In addition to being taxing-masters, they can, subject to supervision by the Court, deal with interlocutory work, and even take trials in minor matters as the Associate Chief Justice may find expedient in order to ensure the expeditious dispatch of the Court's business.

While all the full-time judges must reside in or near the National Capital Region (Sect. 7), each Division of the Court can sit any place in Canada and the place and time of the sittings must be arranged to suit the convenience of the litigants (Sects. 15 and 16). In addition, there is authority in the statute (Sect. 7(2)) for a rota of judges to provide for a continuity of judicial availability in any place where the volume of work, or other circumstances, makes such an arrangement expedient.

Judges of the Federal Court of Canada as at December 31, 1974

Chief Justice, Hon. Wilbur Roy Jockett (*first appointed to Exchequer Court, May 4, 1964 — changed to Federal Court, June 1, 1971*)

Associate Chief Justice, Hon. Camilien Noël (*first appointed to Exchequer Court, March 12, 1962 — changed to Federal Court, June 1, 1971*)

Court of Appeal Judges: Hon. Mr. Justice Arthur Louis Thurlow (*appointed August 29, 1956 — June 1, 1971*), Hon. Mr. Justice Louis Pratte (*appointed January 25, 1973, first appointed to Trial Division, June 10, 1971*), Hon. Mr. Justice John James Urie (*appointed April 19, 1973*), Hon. Mr. Justice William Francis Ryan (*appointed April 11, 1974*)

Trial Division Judges: Hon. Mr. Justice Angus Alexander Cattanach (*appointed March 27, 1962 — June 1, 1971*), Hon. Mr. Justice Hugh Francis Gibson (*appointed May 4, 1964 — June 1, 1971*), Hon. Mr. Justice Allison Arthur Mariotti Walsh (*appointed July 1, 1964 — June 1, 1971*), Hon. Mr. Justice Roderick Kerr (*appointed November 1, 1967 — June 1, 1971*), Hon. Mr. Justice Darrel Verner Heald (*appointed June 30, 1971*), Hon. Mr. Justice Francis Urquhart Collier (*appointed September 16, 1971*), Hon. Mr. Justice Patrick Morgan Mahoney (*appointed September 13, 1973*), Hon. Mr. Justice Raymond G. Decary (*appointed September 13, 1973*), Hon. Mr. Justice George Arthur Addy (*appointed September 17, 1973*).

Miscellaneous courts. The Railway Act, 1903 (RSC 1970, c.R-2) established the Board of Railway Commissioners for Canada as a court of record; by the Transport Act, 1938 (RSC 1970, c.T-14) the name was changed to the Board of Transport Commissioners for Canada, and by the National Transportation Act, 1967 (RSC 1970, c.N-17) to the *Canadian Transport Commission*. This court exercises jurisdiction with respect to transport matters under the Railway Act, the Aeronautics Act, the Transport Act and the National Transportation Act, and with respect to telegraph and telephone matters under the Railway Act. The Governor in Council is given jurisdiction to vary or rescind any order of the Commission and an appeal lies from the Commission to the Supreme Court of Canada on a question of jurisdiction or of law.

By virtue of Section 91(21) of the British North America Act, 1867, Parliament has exclusive legislative jurisdiction in relation to bankruptcy and insolvency. By the Bankruptcy Act (RSC 1970, c.B-3) the superior courts of the provinces are constituted *bankruptcy courts*; original jurisdiction is conferred upon the trial courts and appellate jurisdiction is conferred upon the appeal courts of the provinces.

The *Tax Review Board*, created in 1949 as the Income Tax Appeal Board and later changed to the Tax Appeal Board, now operates under the Tax Review Board Act 1970 (SC 1970-71, c.11). The Board is a court of record and has jurisdiction to hear appeals by taxpayers against their assessment under the Income Tax Act and also appeals under the Estate Tax Act, the Old Age Security Act and certain sections of the Canada Pension Plan. An appeal lies from the Board to the Federal Court of Canada and a further appeal from that Court to the Supreme Court of Canada.

The *Court Martial Appeal Court* was established in 1959 by an amendment to the National Defence Act (RSC 1970, c.N-4). The judges of the Court are not fewer than four judges of the Federal Court of Canada designated by the Governor in Council and such additional judges of a superior court of criminal jurisdiction as are appointed by the Governor in Council. The Governor in Council designates one of the judges to be president of the Court. The Court hears appeals from courts martial respecting the legality of a finding of guilty on any charge and the legality of a sentence passed by a court martial. An appeal lies from the Court Martial Appeal Court to the Supreme Court of Canada on a question of law only.

The *Immigration Appeal Board* was established in 1967 by the Immigration Appeal Board Act (RSC 1970, c.I-3). The Board is a court of record, with a broad discretionary jurisdiction with respect to temporary or permanent admission of individuals into Canada, and to hear appeals from decisions or orders under the Immigration Act. The establishing Act provides for the operation of the Board and in particular for the legal and administrative processes involved in appeals by individuals against deportation, detention and the refusal of admission of sponsored relatives ordered under the provisions of the Immigration Act or Regulations. An appeal lies to the Federal Court of Canada and, on leave, to the Supreme Court of Canada.

2.4.2 The provincial judiciary

Certain provisions of the British North America Act govern to some extent the provincial judiciary. Under Section 92(14) the legislature of each province exclusively may make laws in relation to the administration of justice in the province including the constitution, maintenance and organization of provincial courts of both civil and criminal jurisdiction. Section 96 provides that the Governor General shall appoint the judges of the superior, district and county courts in each province, except those of the courts of probate in Nova Scotia and New Brunswick.

2.4.3 The territorial judiciary

In 1971 amendments [now cited as RSC 1970, c.48 (1st Supp.)] to the Yukon Act and the Northwest Territories Act were proclaimed in force, simultaneously with certain ordinances of the Yukon Territory and the Northwest Territories, allowing the territorial governments to assume responsibility for the administration of justice other than the conduct of criminal prosecutions.

In the Yukon Territory, provision was made for a Territorial (now Supreme) Court, a Magistrate's Court, justices of the peace and a Court of Appeal. The Supreme Court consists of a single judge of superior court rank and the Magistrate's Court. Both are located in Whitehorse, although from time to time Magistrate's Court sittings are held in other communities. There are 32 justices of the peace, appointed by the Commissioner, located at 15 points in the Territory. The Judge of the Supreme Court of the Northwest Territories is ex officio Judge in the Yukon Territory and vice versa. The Court of Appeal consists of the Chief Justices of British Columbia, the Justices of Appeal of British Columbia and the Judge of the Supreme Court of the Northwest Territories.

The court system in the Northwest Territories consists of a superior court called the Supreme Court of the Northwest Territories, presided over by one judge located in Yellowknife. The Court of Appeal of the Territories consists of the Justices of Appeal of Alberta and the judges of the Yukon Territory and Northwest Territories Supreme Courts. There are also two full-time magistrates appointed by the Commissioner who have jurisdiction similar to provincial judges; a number of justices of the peace, also appointed by the Commissioner, serve in widely scattered settlements in the Territories.

2.4.4 Salaries, allowances and pensions of judges

Section 100 of the British North America Act provides that the "Salaries, Allowances, and Pensions of the Judges of the Superior, District, and County Courts (except the Courts of Probate in Nova Scotia and New Brunswick) and of the Admiralty Courts in Cases where the Judges thereof are for the Time being paid by Salary, shall be fixed and provided by the Parliament of Canada". These are provided under the Judges Act (RSC 1970, c.J-1 as amended by SC 1970-71, c.55).

The salary of the Chief Justice of Canada is \$47,000 per annum and those of the puisne judges of the Supreme Court of Canada, \$42,000. The salaries of the Chief Justice and the Associate Chief Justice of the Federal Court of Canada are \$39,000 per annum and of the other judges of the Federal Court, \$35,000. The salaries of deputy judges of the federal courts, who are judges of other superior courts and were formerly district judges in admiralty pursuant to the Admiralty Act, which was repealed (admiralty jurisdiction now being provided for by the Federal Court Act), are as follows: Ontario, \$1,500 and Newfoundland three judges at \$333.33 each.

All Chief Justices of provincial superior courts, the Senior Associate Chief Justice and the Associate Chief Justice of the Superior Court of Quebec receive annual salaries of \$39,000; the puisne judges of these courts and the judges of the two territorial courts receive \$35,000 per annum. Where judicial offices are created for supernumerary judges, the incumbents will receive \$35,000 a year. Supernumerary judges are those judges of a superior court of a province who have given up their regular judicial duties to hold themselves available to perform such special judicial duties as may be assigned to them from time to time by the Chief Justice or Associate Chief Justice of the court of which they are a member. The chief judges of county and district courts receive salaries of \$27,000 per annum and the remaining judges and junior judges of all county and district courts, \$25,000 per annum.

Every judge who is in receipt of a salary under the Judges Act is paid an additional salary of \$3,000 per annum as compensation for any extra-judicial services that he may be called upon to perform by the Government of Canada or the government of a province, and for the incidental expenditures that the fit and proper execution of his office as judge may require. In the case of each judge of the Federal Court of Canada and of the territorial courts of the Yukon Territory and the Northwest Territories an additional allowance of \$2,000 per annum is paid as compensation for special incidental expenditures inherent in the exercise of his office as judge.

The Judges Act provides that a judge of a superior or county court who, for the purpose of performing any function or duty as such judge, attends at any place other than that at which or in the immediate vicinity of which he is by law obliged to reside, is entitled to be paid, as a travelling allowance, his moving or transportation expenses and reasonable travelling and other expenses incurred by him in so attending. If a judge uses his personal automobile because of the lack of good public transportation facilities, he is paid a mileage allowance.

Judges' annuities are non-contributory and the statutory retirement age is 75 years except for judges of the Federal Court of Canada who cease to hold office at the age of 70 and judges of the county courts who are compulsorily retired at 70. Those judges of the county courts who held office at the time the retirement age was reduced to 70 years (1971) are not affected by the earlier retirement age but are allowed to serve as judges until they reach 75 years of age, the retirement age in force previously. The Governor in Council may grant an annuity to: a judge who has continued in judicial office for at least 15 years and has attained the age of 65, if he resigns his office; a judge who has continued in judicial office for at least 15 years, if he resigns his office and in the opinion of the Governor in Council the resignation is conducive to the better administration of justice or is in the national interest; a judge who has become afflicted with some permanent infirmity disabling him from the due execution of his office, if he resigns his office or if, by reason of such infirmity, he is removed from office; or a judge who ceases to hold office because he has attained the age of retirement, if he has held judicial office for at least 10 years. The amount of the annuity may not exceed two thirds of the salary annexed to the office held at the time of resignation, removal or ceasing to hold office, as the case may be. An annuity granted to a judge commences on the day of his resignation, removal or ceasing to hold office and continues during his natural life.

The Governor in Council may grant to the widow of a judge who dies while in office an annuity not exceeding two ninths of the salary of the judge at the date of his death, to commence immediately after the death of the judge and to continue thenceforth during her natural life. The Governor in Council may also grant to each of a maximum of four dependent children of a judge who dies while holding office or of a judge who is in receipt of an annuity under the Judges Act, an annuity equal to one fifth of the annuity payable to his widow, or if the judge dies without leaving a widow or such widow is dead, two fifths of the annuity that would have been payable to the judge's widow. When a judge who was granted an annuity upon his retirement dies, the Governor in Council may grant to the widow an annuity not exceeding one third of the annuity that was granted to him. Two ninths of salary and one third of annuity are the same amount in dollars. An annuity granted to the widow of a judge ceases upon her remarriage. No annuity may be granted if the widow married the judge after he ceased to hold office.

2.5 Legal services

2.5.1 The legal profession

The adjective "fused" is sometimes used to describe the legal profession in common law Canada since practising lawyers are both called as barristers and admitted as solicitors. Admission to practise is a provincial matter. Statutes setting out the powers and responsibilities of the provincial organizations are: (Alberta) The Legal Profession Act RSA 1970, c.203 as am.; (British Columbia) The Legal Professions Act RSBC 1960, c.214 as am.; (Manitoba) The Law Society Act RSM 1970, c.L-100; (New Brunswick) The Barristers' Society Act, 1973, SNB 1973, c.80; (Newfoundland) The Law Society Act RSN 1970, c.201 as am.; (Nova Scotia) Barristers and Solicitors Act RSNS 1967, c.18 as am.; (Ontario) The Law Society Act RSO 1970, c.238; (Prince Edward Island) The Legal Profession Act RSPEI 1951, c.84 as am.; (Saskatchewan) The Legal Profession Act RSS 1965, c.301 as am.; (Northwest Territories)

The Legal Profession Ordinance RONWT 1956, c.57 as am.; (Yukon) The Legal Profession Ordinance ROY 1971, c.L-4 as am. In Quebec the legal profession is divided into the separate branches of advocate and notary and their statutes are the Bar Act, SQ 1966/67, c.77 as am. and the Notarial Act, SQ 1968, c.70.

2.5.2 Legal aid

For many years the provision of legal services to persons unable to afford the fees normally charged by a lawyer was viewed as a responsibility to be assumed by individual lawyers on a voluntary basis as a form of charity. In more recent times most of the provincial governments have moved to establish publicly funded legal aid programs under which persons of limited means are able to obtain the services of a lawyer in a number of criminal and civil matters at either no cost or modest cost to themselves depending upon the client's financial circumstances. The lawyers who act for clients in matters covered by a provincial legal aid program are then paid by the government, usually at a reduced rate, on a fee for services basis or by salary depending upon the type of legal aid program operated in the province. The provincial legal aid programs vary considerably in terms of formalities, scope of coverage and methods of providing the legal services. Some are established by legislative enactment while others exist and operate by way of informal agreements between the provincial government and the law society. Some programs provide for fairly comprehensive coverage in both criminal and civil matters while others at present encompass only criminal offences. Again, some plans operate on a fee for services basis whereas others rely partially or mainly on the services of state salaried lawyers. In some provinces a mixed system is in operation.

In 1971 the federal government entered the field and concluded an agreement with the government of the Northwest Territories for sharing the costs of providing legal aid in both criminal and civil matters for persons in the Territories financially unable to retain the services of a lawyer. This comprehensive legal aid program was implemented on August 17, 1971. In the Yukon Territory the legal aid program is at present a service operated by the territorial bar with the government paying the fees to lawyers who act for legal aid clients charged with criminal offences.

In August 1972, the federal government announced that it was prepared to enter agreements with the provincial governments under which federal funds would be paid to the provinces to assist them in developing or expanding their legal aid programs in matters related to criminal law. Agreements have now been concluded with all the provincial governments. The federal government will contribute up to 50 cents per capita of the provincial population toward the costs of providing lawyers' services to eligible persons subject to criminal charges or proceedings under federal laws. These federal-provincial agreements enable the provincial governments to determine the method or methods by which legal services will be provided to persons who qualify for assistance, but in cases where an individual is charged with a criminal offence carrying a penalty of capital punishment or life imprisonment that person is entitled to retain a lawyer of his or her own choice. The agreements also ensure that a person otherwise eligible to receive legal aid will not be disqualified as a recipient only because he or she is not a resident of the province in which the criminal proceedings take place.

2.6 The federal Department of Justice

The Department of Justice of the Government of Canada is divided, for administrative and functional purposes, into a number of service areas. Lawyers working for the Department may be assigned to sections, or work on such matters as jurimetrics or the federal court reports in Headquarters Legal Services, or as legal advisers to other government departments or agencies as part of Departmental Legal Services, or to offices in Vancouver, Edmonton, Saskatoon, Winnipeg, Toronto, Montreal and Halifax as part of Regional Legal Services. The sections within Headquarters Legal Services, each headed by a director, are described below.

Advisory and research services. This section is responsible for research and preparing legal opinions requested by the Government of Canada and its various departments and agencies.

Civil law. This section conducts litigation and provides legal advice for the government on all matters of a non-criminal nature arising in the province of Quebec.

Civil litigation. The lawyers in this section are responsible for the conduct of the non-criminal litigation involving the Government of Canada originating in those provinces where the

common law prevails. This litigation includes customs and excise tax matters, expropriation cases, disputes over contracts, accident claims, suits for defamation and claims for breach of copyright.

Constitutional, administrative and international law. This section is responsible for co-ordinating and providing legal advice in the general fields of constitutional and administrative law within the Government of Canada and its various departments and agencies. It is concerned with long-term policy in constitutional affairs and with problems of federal-provincial relations. The section also deals with work in the areas of public and private international law. Canada became a member of The Hague Conference on Private International Law in 1968 and the Department is responsible for Canadian participation in the Conference. This section co-ordinates Canadian activities in relation to the Conference, which meets every other year, and it has a similar role with regard to Unidroit, the International Institute for the Unification of Private Law. In both public and private international law this section has a particular interest in matters concerning the countries of the British Commonwealth.

Criminal law. The lawyers in this section participate in criminal litigation in every jurisdiction. They work in co-operation with members of the Department's six regional offices in the prosecution of violations of federal statutes and regulations and are involved in the extradition of persons to and from Canada. An additional and very important function is the work on criminal law amendment which involves considering and assessing the suggestions for the amendment of the criminal code and certain other statutes received from many sources. The section advises the Minister of Justice with respect to these recommendations.

Legislation. The work of this section is concerned with the preparation of legislation from the time a topic is given approval in principle by Cabinet until the resulting enactment receives Royal Assent. The periodic revisions of the *Statutes of Canada* are also compiled here as are the office consolidations of certain acts which are prepared in the periods between major revisions.

Policy planning. This section is responsible for developing legal initiatives and responses to emerging social problems. It is concerned, in co-operation with other departments and levels of government, with assessing recommendations for changes in the law proposed by the Law Reform Commission of Canada and other groups.

Privy Council. This section is responsible for the examination of what is sometimes called subordinate legislation. From time to time Parliament delegates certain legislative functions to other bodies and officials and it is the responsibility of this section to consult with the Clerk of the Privy Council in order to maintain general supervision over the legislative product resulting from this delegation and to consider whether it is within the authority conferred by Parliament (see Statutory Instruments Act, 1970-71, c.38). The section is asked to assume responsibility for the actual drafting of certain subordinate legislation. Lawyers in this section also act as legal advisers to the Clerk of the Privy Council and his staff.

Programs and law information development. This section is intended to develop and administer programs of a service, research or informational nature with respect to such matters, for example, as legal aid, compensation for victims of crimes, native courtworkers and law for the layman.

The property and commercial law section handles all the work involved when land is required for public purposes.

Tax litigation. The lawyers in this section represent the Crown in all aspects of most federal tax litigation. The section has also an advisory function on tax matters with the Department of National Revenue.

A booklet entitled *Department of Justice*, describing in detail the work of the sections, is available free upon request to the Department. It was written for recruitment purposes in 1972 and much of the information in it is still current.

2.7 Police forces

2.7.1 Organization of police forces

The police forces of Canada are organized in three groups: (1) the federal force, which is the Royal Canadian Mounted Police; (2) provincial police forces — Ontario and Quebec have

their own provincial police forces but all other provinces engage the services of the Royal Canadian Mounted Police to perform parallel functions within their borders; and (3) municipal police forces — most urban centres of reasonable size maintain their own police forces or engage the services of the provincial police, under contract, to attend to police matters. In addition, the Canadian National Railways, the Canadian Pacific Railway Company and the National Harbours Board have their own police forces.

The Royal Canadian Mounted Police. The Royal Canadian Mounted Police is a civil force maintained by the federal government. It was established in 1873 as the North-West Mounted Police for service in what was then the North-Western Territory and, in recognition of its services, was granted the use of the prefix "Royal" by King Edward VII in 1904. Its sphere of operations was expanded in 1918 to include all of Canada west of Thunder Bay and in 1920 it absorbed the Dominion Police, its headquarters was transferred from Regina to Ottawa and its title was changed to Royal Canadian Mounted Police.

The force now operates under authority of the Royal Canadian Mounted Police Act (RSC 1970, c.R-9). It is responsible to the Solicitor General of Canada and is controlled and managed by a Commissioner who holds the rank and status of a Deputy Minister and is empowered under the Act to appoint members to be peace officers in all provinces and territories of Canada.

The administration of justice within the provinces, including the enforcement of the Criminal Code of Canada, is part of the power and duty delegated to the provincial governments. All provinces, except Ontario and Quebec, have entered into contracts with the Royal Canadian Mounted Police to enforce criminal and provincial laws, under the direction of the respective attorneys general. In addition, in these eight provinces, the force is under agreement to provide police services to 166 municipalities, thereby assuming the enforcement responsibility of municipal as well as criminal and provincial laws within these communities. The Yukon Territory and Northwest Territories are policed exclusively by the Royal Canadian Mounted Police and therefore criminal offences, federal statutes and all ordinances of the territories fall within the ambit of force responsibility. The force maintains liaison officers in London, Paris, Rome, Hong Kong and Washington and represents Canada in the International Criminal Police Organization, which has its headquarters in Paris.

The 13 operational divisions, alphabetically designated, make up the strength of the force across Canada; they comprise 39 subdivisions which include 708 detachments. "Headquarters" Division, as well as the Office of the Commissioner, is located at Ottawa. Divisional headquarters, for the most part, are located in the provincial or territorial capitals, except for "C" Division which is in Montreal and "A" Division which is in Ottawa. "N" Division in Ottawa and "Depot" Division in Regina are training divisions.

A teletype system links the widespread divisional headquarters with the administrative centre at Ottawa and a network of fixed and mobile radio units operates within the provinces. The focal point of the criminal investigation work of the force is the Directorate of Laboratories and Identification; its services, together with those of divisional and subdivisional units and of six Crime Detection Laboratories, are available to police forces throughout Canada.

The Canadian Police Information Centre at RCMP Headquarters, a duplexed computer system, is staffed and operated by the force. Law enforcement agencies throughout Canada have access via a series of remote terminals to information on stolen vehicles, licences, wanted persons and stolen property.

The RCMP operates the Canadian Police College at which force members and selected representatives of other Canadian and foreign police forces may study the latest advances in the fields of crime prevention and detection.

As at January 31, 1975 the force had a total strength of 16,738 including regular members, special constables, civilian members and Public Service employees.

Ontario Provincial Police. The Ontario Provincial Police, a Crown force, is the third largest deployed force on the North American continent, having a total authorized strength of more than 5,000 (1974) uniformed and civilian personnel.

The OPP is administered from general headquarters at Toronto by a Commissioner, under the Ministry of the Solicitor General. Other senior executive officers include two Deputy Commissioners and six Assistant Commissioners. The force has two principal sides —

Operations and Services — each of which is administered by a Deputy Commissioner. In turn, six divisions at the next level — Field, Traffic, Management, Staff Services, Special Services, and Staff Development — are administered by their respective Assistant Commissioners. Specialized branches under the Special Services Division include Auto Theft, Criminal Investigation, Anti-rackets, Security, Intelligence, and Special Investigations.

For policing and administration purposes, the province is divided geographically into 17 districts. In the field, there are 187 detachments controlled through 17 district headquarters located at Chatham, London, Burlington, Niagara Falls, Downsview, Mount Forest, Barrie, Peterborough, Belleville, Perth, Long Sault, North Bay, Sudbury, Sault Ste Marie, South Porcupine, Thunder Bay and Kenora; 13 municipalities are policed under special contract.

Under provisions of the Ontario Police Act, the force is responsible for: (1) enforcing federal and provincial statutes in those areas that are not required to maintain their own police department; (2) maintaining a traffic patrol on the more than 10,000 miles of King's Highways and 65,000 miles of secondary county and township roads; (3) enforcing the Liquor Licence Act and the Liquor Control Act for Ontario; (4) maintaining a Criminal Investigation Branch and other specialized branches to assist all other forces in the investigation of major crimes; and (5) assisting other forces by providing additional manpower in the event of emergencies.

Under the Staff Services Division, the Central Records and Communications Branch offers 24-hour seven-day-week service to all police departments in Ontario on such matters as criminal records, fingerprint records, dry-cleaning and laundry mark identification. The Branch also serves as the Ontario Police Force's Driver Suspension Control Centre.

The OPP operates one of the largest frequency-modulation radio networks in the world, with 113 fixed radio stations and more than 1,597 radio-equipped mobile units including motorcycles, marine units and aircraft. It also operates the Ontario Provincial Police telecommunications network connecting all 17 districts as well as other police departments on a local, national and international basis. Extensions to routine police service are provided by canine, SCUBA, marine-bush rescue units, and aircraft, strategically located throughout the province and available to other law-enforcement agencies upon request.

The year 1974 saw the first recruitment of women in the force's 65-year history. Recruitment of both men and women will permit qualified young persons to make a career in a long-established police force. Officers from inspector up to and including the rank of Commissioner receive the Queen's Commission in the same manner as members of Canada's Armed Forces.

Quebec Police Force. Under the authority of the Attorney General, the Quebec Police Force is responsible for maintaining peace, order and public safety throughout the province, and for prevention and investigation of criminal offences and violations of provincial law. The Force is under the command of a director general and four assistant directors-general with support services provided by a comptroller-general of personnel and communications. The Force, with headquarters in Montreal, is divided into six services: planning, personnel and communications, administration, operations, technical, and special services (intelligence and security).

For police purposes, the province is divided into eight districts each under the command of a Chief Inspector or an Inspector. *Bas St-Laurent* District, including the sections of Chandler, Rimouski and Baie Comeau, has 18 detachments; *Saguenay-Lac St-Jean*, six detachments; *Quebec*, including the sections of Québec-Nord, Québec-Sud and Rivière-du-Loup, 24 detachments; *La Mauricie*, nine detachments; *L'Estrie*, six detachments; *Montreal*, including the sections of Joliette, Montreal, Saint-Jean, and Arctic Quebec, 28 detachments; *Outaouais* and *Nord-Ouest*, eight detachments each. Strength of the Quebec Police Force at the end of 1974 was 4,018 officers, non-commissioned officers and constables and 932 civilian employees.

Municipal police forces. Provincial legislation makes it mandatory for cities and towns to furnish adequate municipal policing for the maintenance of law and order in their communities. Also, all villages and townships or parts of townships having a population density and a real property assessment sufficient to warrant maintenance of a police force, and having been so designated by Order in Council, are responsible for adequate policing of their municipalities.

2.7.2 Uniform crime reporting

The present method of reporting police statistics (police administration, crime and traffic

enforcement statistics), known as the Uniform Crime Reporting Program, was started on January 1, 1962. The program was developed by the (then) Dominion Bureau of Statistics in co-operation with the Canadian Association of Chiefs of Police Committee on Uniform Crime Reporting.

As shown in Table 2.2, police personnel in Canada numbered 56,117 at the end of 1973, including 45,889 sworn-in police officers, 9,663 other full-time employees serving as clerks, technicians, artisans, commissionaires, guards, special constables, etc. and 565 cadets. The ratio of police personnel per 1,000 population was 2.5 and the ratio of police was 2.1. Provincial and territorial ratios for police personnel ranged from 1.3 to 3.7 per 1,000 persons and for police only from 1.3 to 2.4. Total municipal police personnel numbered 31,329 made up of 29,090 members of municipal forces; 2,191 Royal Canadian Mounted Police and 48 Ontario Provincial Police under municipal contracts.

Five policemen were killed by criminal action during 1973 and seven policemen lost their lives accidentally while on duty. Police transport facilities at the end of the year included 10,182 automobiles, 819 motorcycles, 361 other motor vehicles, 448 boats, 25 aircraft, 231 horses and 128 service dogs.

Table 2.3 shows the number of crimes dealt with by the police in 1973 including offences under the criminal code, federal statutes, provincial statutes and municipal by-laws other than traffic; offences cleared by charge and otherwise; and the number of adults and juveniles charged. Offences reported or known to police which investigation proved unfounded are not shown but numbered 110,520 including 89,895 under criminal code classifications; 11,894 under federal statutes; 6,684 under provincial statutes; and 2,047 under municipal by-laws.

During 1973, police reported 104,594 offences against the person including 474 murders, 483 attempted murders, 11,994 rape and other sexual offences, and 91,577 offences of wounding and other assaults (not indecent). All offences against the person resulted in the charging of 38,318 persons, 2,155 of them juveniles. During the year there were 846,314 cases of robbery, breaking and entering, theft, fraud and other offences against property resulting in 164,377 persons charged, 42,159 of them juvenile males and 5,540 juvenile females. There were 3,573 cases of prostitution, 3,009 gaming and betting, 8,949 offensive weapons and 332,112 other criminal code offences. In addition to 42,786 offences under various federal statutes, there were 46,451 under the Narcotic Control Act and 6,321 under the controlled and restricted drug parts of the Food and Drugs Act. These two classifications resulted in the charging of 45,876 persons including 2,112 juvenile males and 371 juvenile females.

Provincial and territorial fire marshals and commissioners reported 4,480 suspected or known incendiary offences of which 966 were proven unfounded after investigation; 731 cases were cleared by charge and 502 cleared otherwise. Charges were laid against 615 adults and 250 juveniles.

There were 69,838 motor vehicles stolen (an estimated 644.9 per 100,000 registered vehicles), 61,367 or 87.9% of these vehicles were recovered. Police were asked to locate 23,902 missing adults and 57,197 missing juveniles of whom 22,864 adults and 57,197 juveniles were located. Police reported investigating death by drowning of 1,440 persons.

During 1973, police departments reported 192,914 (185,013 in 1972) criminal code traffic offences resulting in 139,063 (132,920) persons charged, 4,527 (3,708) of them females. Total traffic charges under other federal statutes numbered 8,734 (5,425); 1,962,416 provincial statutes (other than the three selected offences almost identical to those under the criminal code that are shown separately in Table 2.4) (2,012,035 in 1972) and 401,833 (432,772) municipal by-laws excluding parking. Parking violations numbered 5,126,586 (5,960,530).

There were 664,033 (610,836) traffic accidents reported of which 5,319 (5,345) involved fatalities, 149,094 (139,825) resulted in injuries and 509,620 (465,666) involved property damage over \$200 (\$100 in Quebec). There were 6,404 (6,373) persons killed in traffic accidents including 4,877 (4,858) drivers and passengers, 1,216 (1,276) pedestrians, 222 (219) cyclists and 89 (20) others. Persons injured numbered 218,778 (204,587).

2.8 Crime and delinquency

2.8.1 Adult offenders and convictions

Offences may be classified under two headings, "indictable offences" and "offences punishable on summary conviction". Indictable offences are grouped in two main categories:

offences that violate the criminal code and offences against federal statutes. These include the more serious crimes. Offences punishable on summary conviction — those not expressly made indictable — include offences against the criminal code, federal statutes, provincial statutes and municipal by-laws. Increases in the total number of summary conviction offences do not measure adequately the increase in the seriousness of crime. Many summary conviction offences amount to mere disturbances of the peace, minor upsets to public safety, health and comfort such as parking violations, intoxication and practising trades without licence. Nevertheless, summary conviction offences may include more serious charges such as assault and contribution to juvenile delinquency.

Adults convicted of indictable offences. Statistics are available for persons convicted of indictable offences. Thus it is possible to determine the population engaged in prohibited activities and to help in the treatment of anti-social behaviour in terms of subject-centred action. In the present counting system, although individuals may be charged with more than one offence, only one offence is tabulated for each person and is selected according to the following criteria: (1) if the person were tried on several charges, the offence is that for which proceedings were carried to the farthest stage — conviction and sentence; (2) if there were several convictions, the offence is that for which the heaviest punishment was awarded; (3) if the final result of proceedings on two or more charges were the same, the offence is the more serious one, as measured by the maximum penalty allowed by the law; (4) if a person were prosecuted for one offence and convicted of another — for example, charged with murder and convicted of manslaughter — the offence is the one for which the person was convicted.

In 1971 there were 54,098 adults charged with 92,335 indictable offences of whom 47,874 were found guilty of 79,437 offences (see Table 2.5). All data for 1970 and 1971 exclude returns for Quebec and Alberta. It should be noted that figures given in Tables 2.5 - 2.16 are based on information received through the provincial judicial systems and consequently cannot be compared with data reported by police under the Uniform Crime Reporting Program (Tables 2.2 - 2.4) which include these two provinces.

Table 2.6 classifies indictable offences by type of offence for 1970 and 1971. Class I covers offences against the person and in 1971, 5,429 males and 344 females were convicted in this category, mostly for assaults of various kinds. Classes II to IV deal with offences against property. Thefts predominate among the offences in these classes, and breaking and entering, extortion and robbery — serious crimes which involve acts of violence — are the next most numerous. Class V deals with offences relating to currency and Class VI with miscellaneous offences; among the latter, the most numerous convictions are for offences connected with gaming, betting and lotteries. In 1971, 1,766 men and 155 women were convicted under federal statutes of whom 1,340 men and 127 women were offenders under the Narcotic Control Act.

The number of female offenders convicted of indictable offences increased from 6,997 in 1970 to 7,735 in 1971 with Ontario accounting for 4,460 and British Columbia for 1,615 of the total. The ratio of female offenders convicted to total persons convicted increased from 15.3% in 1970 to 16.1% in 1971; the increases ranged from 4.3% in Prince Edward Island to 17.2% in Ontario. Table 2.7 summarizes the most serious court sentences given for indictable offences and Table 2.8 shows the method of trial and disposition of cases.

Two kinds of sentences — probation and commitment to an institution — maintain, for a certain period of time, a relationship between the person dealt with by the court and the legal institutions of a community. There are several types of institutions to which a person can be committed, such as penitentiaries, reformatories, jails and industrial farms. Theoretically, every institution has a specific purpose which is supposed to be taken into account when arriving at a legal decision. In practice, however, the availability of an institution in a given community is a factor in determining the decision rendered by the court.

Young adult offenders (16-24 years). Attention is focused on the needs of the young adult offenders, 16-24 years of age, who constitute a promising group for rehabilitation in modern reception and diagnostic centres equipped for education and trade training. The young men and women in this age group accounted for 24.0% of the total population 16 years of age and over in 1971 but they formed over half of the criminal population committing indictable offences. The group includes offenders who may already be experienced criminals as well as first offenders likely to be turned from crime by further education and training. There were

24,504 young adult offenders in 1971, an increase of 6.0% over the previous year (see Tables 2.9 and 2.10).

Convictions for summary conviction offences. Offences punishable on summary conviction under the criminal code or under the provincial summary conviction Acts as the case may be are triable by magistrates and justices of the peace. Data relating to these offences are based on convictions; no information is available on either the number of persons involved in these offences or the number of charges (see Table 2.11).

Appeals. Appeal is an important safeguard in Canada's legal system. The conviction or the sentence pronounced by a judge of a first instance court may be appealed on the grounds that the verdict was unreasonable, that there was a wrong decision on some question of law or that there was a miscarriage of justice. In 1971 there were 3,735 appeals in indictable cases disposed of by the courts, of which 474 were Crown appeals and 3,261 appeals of the accused. Of the Crown appeals, 135 were from acquittal and 339 from sentence. Appeals in summary conviction cases disposed of by the courts numbered 1,856 in 1971. Of these, 259 were appeals of the informant and 1,597 appeals of the accused. The informant appeals comprised 194 from acquittal and 65 from sentence, and appeals of the accused comprised 1,234 from conviction and 363 from sentence.

2.8.2 Juvenile delinquents

Juvenile delinquent, as defined in the Juvenile Delinquents Act, means any child who violates any provision of the criminal code or of any federal or provincial statute, or of any by-law or ordinance of any municipality, or who is guilty of sexual immorality or any similar form of vice, or who is liable by reason of any other act to be committed to an industrial school, or juvenile reformatory under the provision of any federal or provincial statute. The commission by a child of any of these acts constitutes an offence known as a delinquency. The upper age limit of children brought before the juvenile courts in the provinces varies. The Act defines a child as meaning any boy or girl apparently or actually under the age of 16 years, or such other age as may be directed in any province. In Prince Edward Island, Nova Scotia, New Brunswick, Ontario and Saskatchewan under 16 is the official age; in Alberta under 16 for boys and under 18 for girls; in Newfoundland under 17; in Quebec, Manitoba and British Columbia under 18 years. Up to 1967, it was the practice of Statistics Canada to publish information about juvenile delinquents 16 years of age and over separate from that of juveniles under 16 years of age. From 1967 on, the figures include all those considered as juveniles by the respective provinces, regardless of the differing upper age limits.

Included in the statistics of juvenile delinquents (Tables 2.12 - 2.14) are cases (alleged as well as adjudged) which were brought before the courts and dealt with formally. A case was counted separately each time a child appeared before the court for a new delinquency or delinquencies. In instances where multiple delinquencies were dealt with at one court appearance, only one delinquency — the most serious — was selected for tabulation. Delinquencies reported as informal cases by the courts were not included nor were cases of children presenting conduct problems which were not brought to court or which were dealt with by the police, social agencies, schools or youth-serving agencies. Thus, community facilities for dealing with children's problems may have an influence on the number of cases referred to court and, therefore, an effect on the statistics of juvenile delinquents.

2.9 Correctional institutions

Correctional institutions may be classified under three headings: (1) training schools — operated by the provinces or private organizations under provincial charter for juvenile offenders serving indefinite terms up to the legal age for children in the particular province; (2) provincial adult institutions; and (3) penitentiaries — operated for adult offenders by the federal government in which sentences of over two years are served.

2.9.1 Institutions and training schools

There is a limited amount of statistical information available with respect to correctional institutions. "In-custody" figures shown in Table 2.15 for penitentiaries refer only to those persons under sentence, but the figures for admissions include those received from courts as well as by transfer from other penitentiaries and by cancellation of paroles. Figures for releases include expiry of sentences, transfers between penitentiaries, releases on parole, deaths,

pardons and releases on court order. In-custody figures for provincial and county institutions may include, in addition to those serving sentences, persons awaiting trial, on remand for sentence or psychiatric examination, awaiting appeal or deportation, any others not yet serving sentence and, for training school population, juveniles on placement.

Population figures in Table 2.15 are for a given day of the year. These figures represent, in effect, a yearly census of correctional institutions and, as such, are not necessarily indicative of the daily average population count. For instance, if an abnormal number of commitments is made to a certain institution on or just prior to the end of the year, the result will be an unrepresentative population total for the institution in that year.

Table 2.16 shows the number of admissions to penitentiaries by offence for the years 1971 to 1973 and the percentage of total admissions accounted for by each offence type. Admissions are classified by major offence, determined as described above (Section 2.8.1). From the table it can be seen that the various offence categories have each accounted for a fairly stable percentage of the total admissions to penitentiaries over this three-year period. Certain variations are, however, evident. Homicide admissions have fluctuated both in number and in the percentage of total admissions they comprise. Admissions for robbery declined from 1971 to 1972, remaining stable in 1973. Admissions for prison breach showed a marked decline in 1973. Admissions for breaking and entering, for theft and for fraud declined over the three-year period both in number and as a percentage of total admissions. In contrast, admissions under the Narcotic Control Act and for parole violators increased. The largest offence categories were consistently robbery, and breaking and entering, accounting together for over one third of total admissions in each year.

With this limitation in mind, certain changes in the total populations of the various correctional institutions may be noted. The population in penitentiaries continued to increase in 1973. The population in provincial adult institutions continued to decline, though by a smaller percentage than in the previous years. The population in training schools increased in 1973 after having decreased in the previous years.

2.9.2 Canadian Penitentiary Service

The Canadian Penitentiary Service operates under the Penitentiary Act (RSC 1970, c.P-6) and is under the jurisdiction of the Solicitor General of Canada. It is responsible for all federal penitentiaries and for the care and training of persons committed to those institutions. The Commissioner of Penitentiaries, under the direction of the Solicitor General, is responsible for control and management of the Service, and related matters.

Headquarters of the Penitentiary Service is in Ottawa. Regional directorates are located in Vancouver, BC; Kingston, Ont.; Ville de Laval, Que.; and Saskatoon, Sask. Four correctional staff colleges, at Kingston, Ville de Laval, New Westminster and Edmonton, train Service recruits and supply refresher courses for senior penitentiary officers. Conferences for CPS and special groups are also held at the colleges.

In the year ended December 31, 1974, the federal penitentiary system controlled 51 institutions: 14 maximum, 13 medium, and 24 minimum security institutions. Total inmate population was 8,610, of whom 1.5% were female offenders; 41% (including females) were in maximum security; 46% in medium security, and 13% in minimum security institutions. New, smaller institutions are being designed to provide more rehabilitation facilities for inmates, with indoor and outdoor recreation. Plans to phase out old institutions are being worked out.

After sentence by the court, prisoners are received by CPS in a reception centre, a maximum institution where security and training classification is carried out. Based on diagnostic results each inmate is placed in an institution that provides the best training program, and degree of security required. Minimum stay at the centre is usually six weeks. Maximum security institutions include psychiatric centres, which operate as a medical service within CPS. Institutions classified as maximum are located at Dorchester, NB; Ste-Anne-des-Plaines and Ville de Laval, Que.; Kingston and Bath, Ont.; Stony Mountain, Man.; Prince Albert, Sask.; Abbotsford and New Westminster, BC.

Inmates transferred from maximum to medium and minimum security institutions usually have greater opportunity to take part in training programs but must first establish suitability as a lower security risk. Medium security units are located at: Springhill, NS; Cowansville and Ville de Laval, Que.; Campbellford, Kingston and Joyceville, Ont.; Drumheller and Innisfail, Alta.; Agassiz, Abbotsford, Mission City and William Head, BC.

Minimum security institutions including Community Correctional Centres, forestry camps and farms, are located at: Dorchester, Saint John and Blackville, NB; Halifax, NS; Ville de Laval and Ste-Anne-des-Plaines, Que.; Kingston, Gravenhurst, Petawawa, Toronto and Bath, Ont.; Stony Mountain and Winnipeg, Man.; Prince Albert and Regina, Sask.; Edmonton and Calgary, Alta.; Victoria, Agassiz, Vancouver and Mission City, BC. Community Correctional Centres are located in urban communities across Canada offering parolees contact with potential employers and access to the free community as a rehabilitative measure. Some inmates sentenced to federal penitentiary terms in Newfoundland are held in the provincial centre at St. John's, Nfld., under provisions of Section 14, Penitentiary Act. Contracts whereby services are exchanged between the federal government and some provinces provide for inmate transfers with full-cost recovery.

Opportunities for upgrading and extending educational levels are provided in the institutions and through day parole or temporary absence passes to the outside community. Classes are full- or part-time. Correspondence courses are also offered at elementary, secondary and university levels. In 1974, 700 inmates enrolled in educational courses within the institutions, instructed by penitentiary staff teachers. In the projected program for community education some 1,300 were expected to take the courses. Most institutional chapels have multi-purpose programs where religious instruction is given and other programmed activities are available. Community participation in the programs is encouraged.

The living-unit program, first introduced into CPS at Warkworth Institution, Campbellford, Ont., was extended to nine medium security institutions. The program's concept is mainly to activate interpersonal relationships between staff and inmates, encouraging better understanding of institutional rules and a less antagonistic reaction to authority. Inmates are assigned to living units and supervised by living-unit officers who are responsible for harmony and everyday exigencies occurring in their unit. Training for living-unit officers is given at CPS Correctional Staff Colleges and on-the-job. To function well, adequate security is essential to the program. Perimeter and inside security of each institution is geared to assist all rehabilitation programs, including the living unit.

In the temporary absence program 47,623 permits were granted in 1974 to 29,087 individuals and 18,536 groups; 203 inmates failed to return. Temporary absence is granted for periods up to three days by heads of institutions, and 15 days by the Commissioner of Penitentiaries for humanitarian, rehabilitative, and medical reasons. Evening and weekend activities involving the outside community continued. Twenty-one citizen participation committees, comprising 210 citizens, operated in the institutions. More than 4,000 citizen volunteers were involved in inmate programs in the institutions and outside; these include ex-inmates. Community-based programs, such as Alcoholics Anonymous, drama, music instruction, public speaking, lectures, films, recreation, discussion groups led by private agencies, professionals, voluntary citizens, and community groups all have a part in the inmate's life while incarcerated. Trade schools within the institutions provide training in 25 occupations, such as: woodwork, metal, textiles, printing, automotive repair, painting and finishing, masonry, stationary engineering, agriculture, food preparation and housekeeping.

Medical treatment for the mentally ill offender is given at three psychiatric centres; in Abbotsford, BC; Kingston, Ont.; and Ville de Laval, Que. A staff of specialists is available in each centre full- or part-time. Within each institution medical facilities provide hospital and out-patient treatment. Inmates requiring surgery are transported to nearby community or armed forces hospitals. Physicians, nurses, psychiatrists, psychologists, and dentists provide daily health facilities for all inmates.

2.9.3 The parole system

Parole is a means by which an inmate in a correctional institution in Canada, if he gives definite indication of his intention to reform, may be released to finish his sentence in the community. The purpose of parole is the protection of society through the rehabilitation of the inmate. The true purpose of corrections should be the reformation of the offender and not merely vengeance or retribution. Nevertheless, the National Parole Board is as much concerned with the protection of society as with the reformation of the offender and supervision is as much a part of the parole system as is guidance. The Board selects inmates who show a sincere intention to reform and assists them to do so by granting parole. The

inmate then is allowed to serve the remainder of his sentence in society but under supervision and subject to certain restrictions and conditions. The Board is not a reviewing authority and is not concerned with the propriety of the conviction or the length of the sentence; this is the function of the court. Nor is parole granted for clemency or mercy.

The National Parole Board is composed of 19 members, including a chairman and vice-chairman, who are appointed by Order in Council. The Board has its headquarters in Ottawa and regional boards in each of five geographic regions of Canada; regional offices are located at Vancouver, Saskatoon, Kingston, Montreal and Moncton. The Board has jurisdiction for parole over any adult inmate committed to a federal prison in Canada who has been convicted of an offence under any federal statute. The Board also has jurisdiction in parole matters with respect to inmates serving definite sentences in provincial institutions where the inmate is sentenced under a federal statute. The Board has authority to revoke or suspend any order made under the criminal code prohibiting any person from operating a motor vehicle. It has no jurisdiction over a child under the Juvenile Delinquents Act or an inmate serving a sentence for a breach of a provincial statute, such as a liquor control Act.

Through the Parole Act the National Parole Board is involved in the pardon granting process under the Royal Prerogative of Mercy when asked to do so by the Solicitor General of Canada. This concerns free pardons, ordinary pardons, and remissions of fines, forfeitures or penalties. Under the Criminal Records Act (RSC 1970, c.12 1st Supp.) the Board also has specific responsibilities for investigations and recommendations concerning pardons of people who were convicted and subsequently rehabilitated. Under that Act a pardon may be granted two years after the end of a sentence for a summary offence or five years after a sentence for an indictable offence.

Normally a person is sent to a federal institution if his sentence of imprisonment is two years or more or to a provincial institution if his sentence is less than two years. All inmates serving sentences in federal prisons who become eligible for parole will have their cases automatically reviewed. Those inmates serving sentences in provincial institutions as the result of a conviction for an offence against a federal statute will be considered for parole upon application by the inmate or by someone on his behalf. The date of parole review to grant or refuse parole for an inmate in a federal penitentiary is set within six months of his entry into the institution. If the sentence is under two years, the inmate is eligible for parole after one third of the sentence is served; if the sentence is two years or more, the inmate is eligible after one third of the sentence is served or after seven years, whichever is less, although he must serve at least nine months of his sentence. Eligibility for an inmate who forfeited his parole by conviction for an indictable offence comes after he either serves one half of his new term, which is made up of the remainder of his sentence plus any new sentence, or after he serves seven years, whichever comes first. The Board has the authority to grant an earlier release in exceptional circumstances where the case is deserving and where the best interests of the community and the inmate will be served.

Anyone sentenced to preventive detention as an habitual criminal or dangerous sexual offender has his case reviewed at least once a year — under the criminal code — to see if he should be granted parole. An offender sentenced to life as a maximum sentence for a crime other than murder becomes eligible for parole after serving seven years.

No inmate sentenced for murder may be released on full parole by the Board without the approval of the Governor in Council. Although eligibility dates may be seven or 10 years for murderers sentenced before January 1, 1974, all offenders sentenced for murder on or after that date will become eligible only after serving a minimum of 10 years. However, eligibility will depend on the time stipulated by the sentencing Court and that may be fixed at any time between 10 and 20 years.

Unless an inmate in a federal institution advises the Board in writing that he does not want parole the Board will review his case every two years after the initial hearing whether he applies or not, until he is either granted parole or his sentence is served.

The decision of the Board about any one inmate is based on reports it receives from the police, from the trial judge or magistrate and from various people at the institution who deal with him. Reports may also be obtained from a psychologist or a psychiatrist and normally a community investigation is conducted to secure as much information as possible about his family and background, his work record and his position in the community. From these

reports, an assessment is made to determine whether he has changed his attitude and is likely to lead a law-abiding life.

When all the reports are received and the community investigation completed, they are analyzed and presented to the Board for consideration. Parole for inmates in provincial institutions is granted or refused on the basis of these reports and investigations. For the inmate in a federal institution there is one more step before the Board makes its decision. He is interviewed by a panel of two or more Board members before his parole eligibility date to clarify or amplify his reasons for requesting parole and other aspects of his case that may have come to light through the reports and investigations.

A person on parole is under the care of a supervisor in one of the district offices of the National Parole Service, an after-care agency worker, or a probation officer. If he violates the conditions of his parole or commits a further offence or misbehaves in any manner, the Board may suspend or revoke his parole and return him to the institution to serve the part of his sentence that was outstanding at the time his parole was granted. If a parolee commits an indictable offence punishable by two years or more his parole is automatically forfeited and he is returned to the institution to serve the unexpired balance of his sentence plus any new term to which he is sentenced for the commission of the new offence.

The Board has been in operation since 1959 and up to the end of December 1974 it had granted 46,981 full paroles. During those 16 years there were 9,611 violations of parole; 3,215 revocations by the Board for misbehaviour or commission of a minor offence and 6,396 forfeits for conviction of an indictable offence. In 1974 the Board granted 1,496 full paroles to inmates in federal institutions and to 1,638 inmates serving sentences in provincial institutions for violation of a federal law. It also granted 760 day paroles to federal inmates and 624 day paroles to provincial inmates. In 1974 there were also 3,413 federal inmates released on mandatory supervision. During the same year there were 233 revocations and 469 forfeitures of mandatory supervision.

Sources

- 2.1 - 2.6 Advisory and Research Services, Department of Justice.
- 2.7 Judicial Division, Institutional and Public Finance Statistics Branch, Statistics Canada; Royal Canadian Mounted Police; Ontario Provincial Police; Quebec Police Force.
- 2.8 - 2.9.1 Judicial Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 2.9.2 Canadian Penitentiary Service.
- 2.9.3 National Parole Board.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed		certain tables may not add due to rounding

2.1 Provinces and territories of Canada, dates of admission to Confederation, legislative processes by which admission was effected, present area and seat of government

Province, territory or district	Date of admission or creation	Legislative process	Present area sq miles	Seat of provincial or territorial government
Ontario ¹	July 1, 1867	Act of Imperial Parliament — The British North America Act, 1867 (Br. Stat. 1867, c. 3) and Imperial Order in Council, May 22, 1867	412,582	Toronto
Quebec ²	July 1, 1867		594,860	Quebec
Nova Scotia	July 1, 1867		21,425	Halifax
New Brunswick	July 1, 1867		28,354	Fredericton
Manitoba ³	July 15, 1870	Manitoba Act, 1870 (SC 1870, c. 3) and Imperial Order in Council, June 23, 1870	251,000	Winnipeg
British Columbia	July 20, 1871	Imperial Order in Council, May 16, 1871	366,255	Victoria
Prince Edward Island	July 1, 1873	Imperial Order in Council, June 26, 1873	2,184	Charlottetown
Saskatchewan ⁴	Sept. 1, 1905	Saskatchewan Act, 1905 (SC 1905, c. 42)	251,700	Regina
Alberta ⁴	Sept. 1, 1905	Alberta Act, 1905 (SC 1905, c. 3)	255,285	Edmonton
Newfoundland	Mar. 31, 1949	The British North America Act, 1949 (Br. Stat. 1949, c. 22)	156,185	St. John's
Northwest Territories ⁵	July 15, 1870	Act of Imperial Parliament — Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105) and Imperial Order in Council, June 23, 1870	1,304,903	Yellowknife
Mackenzie ⁶	Jan. 1, 1920	Order in Council, Mar. 16, 1918	527,490	
Keewatin ⁶	Jan. 1, 1920		228,160	
Franklin ⁶	Jan. 1, 1920		549,253	
Yukon Territory ⁷	June 13, 1898	Yukon Territory Act, 1898 (SC 1898, c. 6)	207,076	Whitehorse
Canada			3,851,809	

¹The area of Ontario was extended by the Ontario Boundaries Extension Act, 1912 (SC 1912, c. 40).

²Extended by Quebec Boundaries Extension Act, 1912 (SC 1912, c. 45) and diminished Mar. 1, 1927 in consequence of the Award of the Judicial Committee of the British Privy Council whereby approximately 112,000 sq miles of territory (formerly considered as part of Quebec) was assigned to Newfoundland.

³Extended by the Extension of Boundaries Act of Manitoba, 1881 and the Manitoba Boundaries Extension Act, 1912 (SC 1912, c. 32).

⁴Saskatchewan and Alberta created as provinces in 1905 from the area formerly comprised in the provisional districts of Assiniboia, Athabasca, Alberta and Saskatchewan established May 17, 1882 by minute of Canadian Privy Council concurred in by Dominion Parliament and Order in Council, Oct. 2, 1895.

⁵By an Imperial Order in Council passed on June 23, 1870 pursuant to the Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105), the former territories of the Hudson's Bay Company known as Rupert's Land and the North-Western Territory were transferred to Canada effective July 15, 1870. These territories were designated as the North-West Territories by the Act of SC 1869, c. 3, and as the Northwest Territories by RSC 1906, c. 62. By Imperial Order in Council of July 31, 1880 (effective Sept. 1, 1880), all British territories and possessions in North America not already included within Canada and all islands adjacent thereto (with the exception of the Colony of Newfoundland and its dependencies) were annexed to Canada and these additional territories were formally included in the North-West Territories by SC 1905, c. 27. The province of Manitoba was formed out of a portion of the territories by the Manitoba Act, 1870 (SC 1870, c. 3) and a further portion was added to Manitoba in 1881 by SC 1881, c. 14. The provinces of Alberta and Saskatchewan were formed out of portions of the territories in 1905 and in 1912 other portions were added to Manitoba, Ontario and Quebec.

⁶By SC 1876, c. 21, a separate district to be known as the District of Keewatin was established and provision was made for the local government thereof. The Act was expressed to come into force by proclamation. It provided that portions of the District might be re-annexed to the North-West Territories by proclamation; in 1886 a portion of the District of Keewatin was re-annexed and in 1905 the entire Keewatin District was re-annexed. The Act of 1876 was never proclaimed. By Order in Council of May 8, 1882 the provisional districts of Assiniboia, Saskatchewan, Alberta and Athabasca were created for the convenience of settlers and for postal purposes. By Order in Council of Oct. 2, 1895 the further provisional districts of Ungava, Franklin, Mackenzie and Yukon were created. The boundaries of these provisional districts were re-defined by Order in Council of Dec. 18, 1897. Subsequently the Yukon Territory was formed, the provinces of Alberta and Saskatchewan were created and other portions of the territories were annexed to Quebec, Ontario and Manitoba. By Order in Council dated Mar. 16, 1918 (effective Jan. 1, 1920) the remaining portions of the Northwest Territories were divided into three provisional districts known as Mackenzie, Keewatin and Franklin.

⁷The provisional district of Yukon established in 1895 was created a judicial district of the North-West Territories by proclamation issued pursuant to Sect. 51 of the North-West Territories Act (RSC 1886, c. 50) on Aug. 16, 1897 and, by the Yukon Territory Act (SC 1898, c. 6), was declared to be a separate territory.

2.2 Police personnel, actual strength, 1972 and 1973

Force	1972				1973P			
	Police	Cadets	Other full-time employees	Total	Police	Cadets	Other full-time employees	Total
Royal Canadian Mounted Police	10,960	—	3,967	14,927	12,018	—	3,874	15,892
Ontario Provincial Police	3,862	19	1,052	4,933	3,766	24	1,196	4,986
Quebec Police Force	3,861	28	794	4,683	3,995	9	862	4,866
Municipal Police (excl. RCMP and OPP contracts)	23,969	499	3,208	27,676	25,001	532	3,557	29,090
Canadian National Railways Police	524	—	28	552	502	—	28	530
Canadian Pacific Railway Company Police	340	—	108	448	329	—	91	420
National Harbours Board Police	246	—	67	313	278	—	55	333
Total	43,762	546	9,224	53,532	45,889	565	9,663	56,117

2.3 Crime statistics, by type of offence, 1972 and 1973 (based on Uniform Crime Reporting Program)

Year and offence	Actual offences ¹	Offences cleared		Persons charged			
		By charge	Other-wise	Adults		Juveniles	
				Male	Female	Male	Female
1972							
Criminal code	1,192,984	262,402	165,478	188,147	27,384	46,647	5,992
Murder, capital and non-capital	479	355	71	322	54	21	5
Attempted murder	412	339	15	299	30	12	1
Manslaughter	40	36	1	36	4	1	—
Rape	1,296	575	226	689	6	67	2
Other sexual offences	9,624	3,243	1,719	2,684	26	372	17
Wounding	1,707	950	313	752	126	93	29
Assaults (not indecent)	85,129	27,400	42,104	25,956	2,030	1,149	207
Robbery	11,881	3,265	638	3,525	198	834	41
Breaking and entering	191,519	31,484	12,666	20,915	701	14,958	530
Theft, motor vehicle	70,729	12,577	4,425	9,486	275	5,281	186
Theft over \$50	151,263	14,006	8,163	10,464	1,611	3,477	369
Theft \$50 or under	314,429	49,868	35,034	27,728	11,135	11,842	3,328
Having stolen goods	13,337	11,926	948	7,715	809	1,516	167
Fraud	68,897	33,105	8,697	14,259	3,095	457	146
Prostitution	2,182	2,068	37	424	1,652	8	35
Gaming and betting	3,124	2,586	55	3,213	310	11	1
Offensive weapons	7,529	5,502	1,086	4,518	195	346	18
Other criminal code ¹	259,407	63,117	49,280	55,162	5,127	6,202	910
Federal statutes ²	39,794	28,672	7,029	18,986	1,160	629	416
Narcotic Control Act	23,844	18,103	1,587	16,711	2,343	720	124
Controlled drugs under the Food and Drugs Act	4,975	3,255	533	2,796	421	178	38
Provincial statutes ¹	318,536	226,337	79,379	200,556	13,040	6,102	3,397
Municipal by-laws ¹	73,749	41,835	20,207	35,485	4,534	1,113	135
1973							
Criminal code	1,298,551	289,776	181,703	206,388	32,716	51,324	6,981
Murder, capital and non-capital	474	346	58	333	49	23	—
Attempted murder	483	394	26	351	39	10	2
Manslaughter	66	59	1	56	8	1	—
Rape	1,593	675	348	852	2	62	1
Other sexual offences	10,401	3,689	2,049	3,222	32	334	27
Wounding	1,882	1,061	428	776	194	95	16
Assaults (not indecent)	89,695	29,637	44,081	27,799	2,450	1,315	269
Robbery	13,166	3,777	611	3,923	285	903	92
Breaking and entering	198,040	33,132	14,267	22,141	865	16,793	802
Theft, motor vehicle	71,591	13,212	5,389	9,605	326	5,801	233
Theft over \$200	63,382	7,031	4,101	6,173	607	1,718	97
Theft \$200 or under	414,573	58,744	42,542	32,844	13,434	14,679	3,970
Having stolen goods	13,791	12,148	1,056	7,590	790	1,731	198
Fraud	71,771	34,768	9,534	14,747	3,348	534	148
Prostitution	3,573	3,436	56	676	2,748	18	57
Gaming and betting	3,009	2,578	254	2,936	229	12	4
Offensive weapons	8,949	6,340	1,373	5,237	269	353	32
Other criminal code ¹	332,112	78,749	55,529	67,127	7,041	6,942	1,033
Federal statutes ²	42,786	29,474	7,255	19,086	1,158	655	469
Narcotic Control Act	46,451	37,196	3,627	34,220	4,578	1,917	304
Controlled drugs under the Food and Drugs Act	6,321	4,418	836	3,941	654	195	67
Provincial statutes ¹	339,119	243,652	85,566	216,162	14,999	6,957	4,001
Municipal by-laws ¹	75,907	37,395	24,523	31,646	4,341	1,016	99

¹Except traffic.²Except traffic, Narcotic Control Act and Food and Drugs Act.

2.4 Traffic enforcement statistics, by type of offence, 1972 and 1973 (based on Uniform Crime Reporting Program)

Offence	Actual Offences	Offences cleared		Persons charged	
		By charge	Otherwise	Male	Female
1972					
Criminal code	185,013	135,335	9,777	129,212	3,708
Criminal negligence					
Causing death	212	202	2	205	3
Causing bodily harm	87	69	2	68	—
Operating motor vehicle	515	484	8	444	11
Failing to stop or remain at scene of accident	58,258	10,393	8,942	9,221	556
Dangerous driving	4,989	4,528	144	4,220	78
Failure or refusal to provide breath sample	8,357	8,271	21	7,939	264
Driving while impaired	100,540	99,443	592	95,891	2,670
Driving while disqualified	12,055	11,945	66	11,224	126
Federal statutes (except parking)	..	..	..	..	5,425
Provincial statutes (except parking)	..	..	..	..	2,012,035
Municipal by-laws (except parking)	..	..	..	..	432,772
Provincial statutes ¹	82,364	58,479	8,435	53,938	4,155
Failing to stop or remain at scene of accident	25,016	7,776	2,513	6,954	541
Dangerous driving	55,907	49,340	5,873	45,657	3,589
Driving while disqualified	1,441	1,363	49	1,327	25

2.4 Traffic enforcement statistics, by type of offence, 1972 and 1973 (based on Uniform Crime Reporting Program) (concluded)

Offence	Actual Offences	Offences cleared		Persons charged	
		By charge	Otherwise	Male	Female
1973					
Criminal code	192,914	141,170	10,364	134,536	4,527
Criminal negligence					
Causing death	202	194	2	233	6
Causing bodily harm	88	77	5	69	1
Operating motor vehicle	545	517	5	514	9
Failing to stop or remain at scene of accident	60,755	10,733	9,383	9,902	697
Dangerous driving	5,578	5,202	151	5,086	102
Failure or refusal to provide breath sample	9,387	9,345	32	9,217	282
Driving while impaired	103,376	102,258	707	97,628	3,262
Driving while disqualified	12,983	12,844	79	11,887	168
Federal statutes (except parking)	..	..	..	8,734	
Provincial statutes (except parking)	..	..	..	1,962,416	
Municipal by-laws (except parking)	..	..	..	401,833	
Provincial statutes ¹	90,837	62,371	10,445	56,597	5,076
Failing to stop or remain at scene of accident	28,154	8,388	2,660	7,842	574
Dangerous driving	60,992	52,352	7,749	47,162	4,477
Driving while disqualified	1,691	1,631	36	1,593	25

¹Provincial traffic offences almost identical to those under the criminal code.

2.5 Persons charged and persons convicted of indictable offences, with ratio per 100,000 population 16 years of age or over, by province, 1970 and 1971

Province or territory	Persons charged		Persons convicted				Persons convicted per 100,000 population 16 years of age and over	
	1970	1971	1970	%	1971	%	1970	1971
	No.	No.	No.		No.		No.	No.
Newfoundland	1,082	1,163	1,047	96.8	1,127	97.0	337	355
Prince Edward Island	79	55	72	91.1	47	85.5	100	64
Nova Scotia	2,407	2,549	2,211	91.9	2,303	94.3	432	444
New Brunswick	2,238	2,343	2,136	95.4	2,233	95.3	527	538
Ontario	27,047	29,382	23,734	87.8	25,888	88.1	452	478
Manitoba	4,309	3,198	3,680	85.4	2,719	85.0	548	399
Saskatchewan	3,855	3,910	3,623	94.0	3,729	95.4	575	595
British Columbia	10,527	11,045	9,067	86.1	9,424	85.3	609	612
Yukon Territory and Northwest Territories	322	453	310	96.3	404	89.2	1,119	1,347
Canada ¹	51,866	54,098	45,880	88.5	47,874	88.5	490	498

¹Excludes Quebec and Alberta.

2.6 Persons charged and convicted of indictable offences, by class of offence, 1970 and 1971

Class of offence	1970		1971	
	Persons charged	Persons convicted	Persons charged	Persons convicted
		Male Female		Male Female
Criminal code				
Class I. Offences against the person	7,356	5,560 355	7,213	5,429 344
Class II. Offences against property with violence	7,983	7,069 172	8,399	7,488 196
Class III. Offences against property without violence	27,580	19,297 5,704	29,432	20,231 6,470
Class IV. Malicious offences against property	1,394	1,119 90	1,574	1,296 84
Class V. Forgery and other offences relating to currency	1,214	942 190	1,328	986 244
Class VI. Other offences	3,685	2,924 264	3,784	2,943 242
Total	49,212	36,911 6,775	51,730	38,373 7,580
Federal statutes	2,654	1,972 222	2,368	1,766 155
Total ¹	51,866	38,883 6,997	54,098	40,139 7,735

¹Excludes Quebec and Alberta.

2.7 First court sentences given for indictable offences, by province, 1970 and 1971

Year and sentence	Nfld.	PEI	NS	NB	Ont.	Man.	Sask.	BC	YT and NWT	Canada ¹
1970										
Option of fine	390	30	834	709	8,022	803	1,116	2,499	84	14,487
Jail										
Under one year	236	21	456	564	4,329	904	938	2,835	107	10,390
One year and over	40	3	9	95	529	272	225	598	18	1,789
Reformatory and training school	—	—	5	3	2,233	—	—	—	—	2,241
Penitentiary										
Under two years	—	—	3	21	44	4	7	4	1	84
Two years and under five	20	8	210	117	717	212	100	281	3	1,668
Five years and under ten	—	—	10	11	147	32	11	57	—	268
Ten years and under fourteen	—	—	1	—	22	1	3	14	—	41
Fourteen years and over	—	—	—	—	9	1	1	4	—	15
Life	—	—	2	—	16	8	4	9	1	40
Preventive	—	—	1	—	1	1	1	1	—	5
Death	—	—	—	—	1	2	—	—	—	3
Suspended sentence without probation	47	3	30	182	1,478	948	407	462	2	3,559
Suspended sentence with probation	314	7	650	434	6,186	492	810	2,303	94	11,290
Total	1,047	72	2,211	2,136	23,734	3,680	3,623	9,067	310	45,880
1971										
Option of fine	446	19	901	719	9,065	605	994	2,802	83	15,634
Jail										
Under one year	214	6	519	534	5,315	624	1,094	3,011	147	11,464
One year and over	56	1	33	123	944	219	203	579	31	2,189
Reformatory and training school	—	—	8	7	1,430	—	—	1	—	1,446
Penitentiary										
Under two years	—	—	2	10	44	—	9	21	—	86
Two years and under five	30	8	199	85	627	139	89	296	5	1,478
Five years and under ten	1	1	10	10	159	23	13	81	2	300
Ten years and under fourteen	—	—	7	—	31	8	1	29	—	76
Fourteen years and over	—	—	—	—	13	—	—	9	—	22
Life	2	—	2	—	8	3	1	12	—	28
Preventive	—	—	—	—	1	—	—	1	—	2
Death	—	—	—	—	—	—	—	—	—	—
Suspended sentence without probation	10	4	62	217	1,747	640	445	233	12	3,370
Suspended sentence with probation	368	8	560	528	6,504	458	880	2,349	124	11,779
Total	1,127	47	2,303	2,233	25,888	2,719	3,729	9,424	404	47,874

¹Excludes Quebec and Alberta.**2.8 Method of trial of persons charged with indictable offences, showing disposition of cases, by province, 1970 and 1971**

Year and method of trial	Nfld.	PEI	NS	NB	Ont.	Man.	Sask.	BC	YT and NWT	Canada ¹
1970										
By judge and jury										
Convicted	4	—	17	—	480	43	52	110	9	715
Acquitted	1	2	4	—	200	10	14	83	2	316
Detained because of insanity	1	—	—	—	26	1	2	5	—	35
Disagreement of jury	—	—	—	—	8	—	—	6	—	14
Stay of proceedings	—	—	—	—	6	4	12	12	—	34
No bill	2	1	1	—	53	—	—	—	—	57
By a judge without jury										
Convicted	1	8	110	—	748	56	146	160	19	1,248
Acquitted	—	3	33	—	256	10	58	57	—	417
Detained because of insanity	—	—	—	—	3	—	1	1	—	5
Stay of proceedings	—	—	—	—	2	2	7	21	—	32
By a magistrate with consent										
Convicted	606	31	1,016	1,088	12,217	2,017	1,779	4,666	164	23,584
Acquitted	12	1	68	54	1,425	98	71	518	9	2,256
Detained because of insanity	1	—	1	—	—	—	—	5	—	7
Stay of proceedings	—	—	—	—	2	264	2	291	—	559
By a magistrate, absolute jurisdiction										
Convicted	436	33	1,068	1,048	10,289	1,564	1,646	4,131	118	20,333
Acquitted	18	—	88	48	1,329	67	64	331	1	1,946
Detained because of insanity	—	—	1	—	2	—	—	4	—	7
Stay of proceedings	—	—	—	—	1	173	—	126	—	301
Total, persons charged	1,082	79	2,407	2,238	27,047	4,309	3,855	10,527	322	51,866
Total, persons convicted	1,047	72	2,211	2,136	23,734	3,680	3,623	9,067	310	45,880

2.8 Method of trial of persons charged with indictable offences, showing disposition of cases, by province, 1970 and 1971 (concluded)

Year and method of trial	Nfld.	PEI	NS	NB	Ont.	Man.	Sask.	BC	YT and NWT	Canada ¹
1971										
By judge and jury										
Convicted	8	1	39	11	427	49	38	149	6	728
Acquitted	4	—	6	2	209	7	22	53	4	307
Detained because of insanity	—	—	2	—	14	1	2	4	—	23
Disagreement of jury	—	—	1	—	2	—	—	2	—	5
Stay of proceedings	—	—	—	—	6	11	5	10	2	34
No bill	1	—	—	—	28	—	—	—	—	29
By a judge without jury										
Convicted	—	12	87	57	800	109	253	204	24	1,546
Acquitted	—	4	22	3	225	19	49	60	4	386
Detained because of insanity	—	—	—	—	4	—	—	—	—	4
Disagreement of jury	—	—	—	—	1	—	—	—	—	1
Stay of proceedings	—	—	—	—	—	11	15	20	1	47
By a magistrate with consent										
Convicted	640	16	1,135	1,155	12,844	1,392	1,625	4,785	221	23,813
Acquitted	20	3	99	43	1,529	62	23	427	15	2,221
Detained because of insanity	—	—	—	2	7	—	—	9	—	18
Disagreement of jury	—	—	—	—	2	—	—	—	—	2
Stay of proceedings	—	—	—	3	14	198	1	500	16	732
By a magistrate, absolute jurisdiction										
Convicted	479	18	1,042	1,010	11,817	1,169	1,813	4,286	153	21,787
Acquitted	10	1	115	51	1,446	58	64	351	3	2,099
Detained because of insanity	1	—	1	—	—	—	—	1	—	3
Stay of proceedings	—	—	—	6	7	112	—	184	4	313
Total, persons charged	1,163	55	2,549	2,343	29,382	3,198	3,910	11,045	453	54,098
Total, persons convicted	1,127	47	2,303	2,233	25,888	2,719	3,729	9,424	404	47,874

¹Excludes Quebec and Alberta.

2.9 Young adult offenders, by age group, sex and province, 1970 and 1971

Year, age group and sex	Nfld.	PEI	NS	NB	Ont.	Man.	Sask.	BC	YT and NWT	Canada ¹
1970										
16-17 years										
M	82	11	429	363	3,248	2	498	29	1	4,663
F	14	1	66	45	442	—	73	2	1	644
18-19 "										
M	200	17	376	292	2,875	660	570	1,558	6	6,554
F	9	—	36	30	369	64	96	249	1	854
20-24 "										
M	275	22	504	429	4,104	967	606	2,263	17	9,187
F	28	—	62	27	572	96	70	361	—	1,216
Total	608	51	1,473	1,186	11,610	1,789	1,913	4,462	26	23,118
1971										
16-17 years										
M	116	8	418	355	3,625	7	527	230	16	5,302
F	14	—	71	33	526	—	73	38	1	756
18-19 "										
M	226	8	385	288	3,207	577	607	1,481	16	6,795
F	29	1	47	20	407	53	100	303	1	961
20-24 "										
M	291	18	544	437	4,462	733	577	2,209	39	9,310
F	41	—	79	24	669	75	99	389	4	1,380
Total	717	35	1,544	1,157	12,896	1,445	1,983	4,650	77	24,504

¹Excludes Quebec and Alberta.

2.10 Young adult offenders convicted of indictable offences, by class of offence and sex, 1970 and 1971

Class of offence	1970		1971	
	Male	Female	Male	Female
Criminal code				
Class I. Offences against the person	2,173	110	2,107	109
Class II. Offences against property with violence	4,684	105	4,931	117
Class III. Offences against property without violence	9,648	2,080	10,631	2,474
Class IV. Malicious offences against property	608	35	714	37
Class V. Forgery and other offences relating to currency	395	95	420	130
Class VI. Other offences	1,313	121	1,235	114
Total	18,821	2,546	20,038	2,981
Federal statutes	1,583	168	1,369	116
Total ¹	20,404	2,714	21,407	3,097

¹Excludes Quebec and Alberta.

2.11 Convictions for summary conviction offences¹, by type, 1971 and 1972

Type of offence	1971	1972P
CRIMINAL CODE	104,458	104,825
Attempts, conspiracies, accessories, counselling	169	134
Attempt to commit suicide	84	21
Bawdy house	132	126
Causing disturbance by being drunk	2,670	1,724
Common assault	8,176	7,965
Communicating venereal disease	25	28
Contempt of court	47	32
Corrupting morals	215	253
Cruelty to animals	87	48
Damage not exceeding \$50 and other interference with property	3,291	3,113
Disorderly conduct	9,860	8,705
Duty of persons to provide necessities	136	74
Duty to safeguard dangerous places	14	2
Fraudulently obtaining food or lodging	974	715
Fraudulently obtaining transportation	122	154
Gaming, betting, lotteries	467	556
Intimidation	111	151
Killing or injuring bird or animal other than cattle	42	46
Motor vehicle		
Criminal negligence in operation	412	252
Dangerous driving	1,991	2,035
Dangerous operation of vessel, etc.	101	135
Driving while impaired	27,762	25,392
Driving while disqualified	5,039	5,640
Driving with more than 80 mg in blood	24,734	27,502
Failing to stop at scene of accident	3,119	3,346
Failure or refusal to provide breath sample	4,089	5,801
Motor vehicle equipped with smoke screen	42	70
Taking motor vehicle without consent	1,580	1,506
Offensive weapons	1,119	1,202
Personating peace officer	31	101
Recognizance, breach of	2,964	2,938
Vagrancy	3,281	883
Other criminal code	4,572	4,175
FEDERAL STATUTES	30,712	28,849
Customs	102	63
Excise	783	421
Fisheries	793	952
Food and drugs	1,906	2,932
Harbour board and merchant seamen's	236	193
Immigration	440	352
Income tax	7,366	8,957
Indian		
Intoxication	111	201
Other	447	236
Juvenile delinquents		
Adults who contribute to delinquency	579	474
Inducing child to leave home, etc.	16	20
Sexual immorality	1,274	142
Lord's day	336	343
National defence	186	255
Railway	1,076	562
Unemployment insurance	2,607	1,805
Weights and measures	95	248
Other federal statutes	12,359	10,693
PROVINCIAL STATUTES	1,186,021	1,281,582
Children of unmarried parents	1,732	1,104
Deserted wives and children's maintenance	9,626	10,762
Game and fisheries	6,715	7,026
Highway traffic		
Driving without care	39,537	49,027
Other traffic	965,337	1,046,581
Liquor control	139,676	125,862
Master and servant	466	435
Medical, dentistry and pharmacy	38	62
Mental diseases	137	120
Prairie and forest fire prevention	67	48
Protection of children	4,241	4,989
Public health	526	523
School laws	295	209
Other provincial statutes	17,628	34,834
MUNICIPAL BY-LAWS	117,947	102,206
Intoxication	2,403	522
Traffic	86,992	75,088
Other	28,552	26,596
Total convictions	1,439,138	1,517,462

¹Excludes Quebec, Alberta and Yukon Territory.

2.12 Juvenile delinquents, by group of offence, and ratio per 100,000 juvenile population, 1971-73¹

Group of offence		1971	1972	1973
Delinquencies against the person	<i>No.</i>	1,723	1,726	1,963
	<i>Ratio</i>	38	38	43
Delinquencies against property with violence	<i>No.</i>	8,790	9,064	9,335
	<i>Ratio</i>	192	199	205
Delinquencies against property without violence	<i>No.</i>	15,093	15,116	15,298
	<i>Ratio</i>	330	331	335
Wilful and forbidden acts in respect of certain property	<i>No.</i>	2,112	2,640	2,668
	<i>Ratio</i>	46	58	58
Forgery and delinquencies relating to currency	<i>No.</i>	136	174	156
	<i>Ratio</i>	3	4	3
Other delinquencies	<i>No.</i>	10,944	13,463	14,731
	<i>Ratio</i>	239	295	323
Total	<i>No.</i>	38,798	42,183	44,151
	<i>Ratio</i>	848	924	968

¹Canada total juvenile population figure in 1971 was 4,576,700, 4,564,000 in 1972, and 4,562,000 in 1973.

2.13 Juvenile delinquents classified by type of delinquency and percentage distribution, 1971-73

Delinquency		1971	1972	1973
Manslaughter and murder and causing death by criminal negligence	<i>No.</i>	24	21	25
	<i>%</i>	0.06	0.05	0.06
Murder, attempt	<i>No.</i>	11	8	5
	<i>%</i>	0.03	0.02	0.01
Common assault	<i>No.</i>	771	747	862
	<i>%</i>	1.99	1.77	1.95
Other delinquencies against the person	<i>No.</i>	315	313	404
	<i>%</i>	0.81	0.74	0.92
Breaking and entering a place	<i>No.</i>	8,407	8,694	8,905
	<i>%</i>	21.67	20.61	20.17
Robbery and extortion	<i>No.</i>	383	370	430
	<i>%</i>	0.99	0.88	0.97
Theft and having in possession ¹	<i>No.</i>	13,159	13,033	12,984
	<i>%</i>	33.92	30.90	29.41
False pretences and fraud and corruption	<i>No.</i>	219	213	302
	<i>%</i>	0.57	0.51	0.68
Arson and other fires ²	<i>No.</i>	194	222	244
	<i>%</i>	0.50	0.53	0.55
Other interference with property	<i>No.</i>	2,295	4,053	4,182
	<i>%</i>	5.92	9.61	9.47
Incorrigibility and vagrancy	<i>No.</i>	1,431	657	444
	<i>%</i>	3.69	1.56	1.01
Immorality	<i>No.</i>	409	390	320
	<i>%</i>	1.06	0.92	0.72
Theft, auto	<i>No.</i>	1,126	1,246	1,437
	<i>%</i>	2.90	2.95	3.26
Various other delinquencies	<i>No.</i>	10,054	12,216	13,607
	<i>%</i>	25.89	28.95	30.82
Total	<i>No.</i>	38,798	42,183	44,151
	<i>%</i>	100.00	100.00	100.00

¹Includes having in possession, theft, theft from mail, theft of bicycle.

²Includes false alarm of fire.

2.14 Disposition of delinquents, by type of sentence and percentage distribution, 1971-73

Type of sentence		1971	1972	1973
Reprimanded	<i>No.</i>	524	791	1,076
	<i>%</i>	1.35	1.88	2.44
Probation ¹	<i>No.</i>	12,422	12,053	11,990
	<i>%</i>	32.02	28.57	27.16
Fined or made restitution	<i>No.</i>	4,318	5,220	6,237
	<i>%</i>	11.13	12.37	14.13
Detained indefinitely	<i>No.</i>	207	129	77
	<i>%</i>	0.53	0.31	0.17
Sent to training school	<i>No.</i>	1,641	1,190	1,108
	<i>%</i>	4.23	2.82	2.51
Final disposition suspended	<i>No.</i>	5,897	7,179	7,763
	<i>%</i>	15.20	17.02	17.58
Mental hospital	<i>No.</i>	14	35	20
	<i>%</i>	0.04	0.08	0.04
Other	<i>No.</i>	13,775	15,586	15,880
	<i>%</i>	35.50	36.95	35.97
Total dispositions	<i>No.</i>	38,798	42,183	44,151
	<i>%</i>	100.00	100.00	100.00

¹Includes probation of court and probation of parents.

2.15 Population in penitentiaries, in provincial adult institutions and in training schools, 1971-73

Type of institution	In custody at beginning of year	Movement in	Movement out	In custody at end of year	% change
1971					
Penitentiaries (Dec. 31)	7,109	11,896	11,522	7,483	+5.3
Provincial adult institutions (Apr. 1, 1971 — Mar. 31, 1972)	11,506	182,658	183,482	10,682	-7.2
Training schools (Dec. 31)	2,243	11,218	11,502	1,959	-12.7
For boys	1,501	7,475	7,668	1,308	-12.9
For girls	742	3,743	3,834	651	-12.3
1972					
Penitentiaries (Dec. 31)	7,483	12,115	11,345	8,253	+10.3
Provincial adult institutions (Apr. 1, 1972 — Dec. 31, 1972)	10,682	124,974	125,650	10,006	-6.3
Training schools (Dec. 31)	1,959	11,923	12,005	1,877	-4.2
For boys	1,308	7,744	7,783	1,269	-3.0
For girls	651	4,179	4,222	608	-6.6
1973					
Penitentiaries (Dec. 31)	8,253	12,778	11,920	9,111	+10.4
Provincial adult institutions (Dec. 31)	10,006	163,035	163,239	9,802	-2.0
Training schools (Dec. 31) ¹	1,877	12,602	12,426	2,053	+9.4
For boys	1,184	7,607	7,532	1,259	+6.3
For girls	608	4,146	4,097	657	+8.1

¹Totals include two co-educational schools not included in the figures broken down by sex.

2.16 Penitentiary admissions, by offence, 1971-73

Offence	1971		1972		1973	
	No.	% of total	No.	% of total	No.	% of total
Homicide	180	4.1	260	6.1	248	5.7
Rape	82	1.9	91	2.2	118	2.7
Other sexual offences	124	2.8	108	2.6	82	1.9
Wounding	74	1.7	51	1.2	68	1.6
Assault	103	2.4	97	2.3	120	2.8
Robbery	837	19.1	699	16.5	707	16.4
Breaking and entering	1,031	23.5	860	20.3	840	19.4
Prison breach	120	2.7	161	3.8	44	1.0
Theft	427	9.7	361	8.5	349	8.1
Having stolen goods	186	4.2	201	4.7	204	4.7
Fraud	388	8.9	307	7.3	263	6.1
Prostitution and procuring	8	0.2	—	—	4	0.1
Offensive weapons	59	1.3	66	1.6	51	1.2
Habitual criminal	3	0.1	10	0.2	7	0.2
Dangerous sexual offender	3	0.1	3	0.1	1	—
Motor vehicle	23	0.5	14	0.3	22	0.5
Other criminal code	173	3.9	179	4.2	200	4.6
Narcotic Control Act	242	5.5	325	7.7	484	11.2
Parole violators	309	7.1	412	9.7	465	10.8
Other federal statutes	8	0.2	27	0.6	42	1.0
Total	4,380	99.9	4,232	99.9	4,319	100.0

Sources

2.1 Legal Research and Planning Section, Legal Branch, Department of Justice.

2.2 - 2.16 Judicial Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

Chapter 3

Government

3.1 Organization of the federal government

In any political system there are processes whereby people express their demands to the government; whereby priorities are established among those demands and policies formulated for their implementation; and, finally, whereby the policies are implemented. The institutions, both governmental and non-governmental, through which these processes are carried on vary from country to country and tend to evolve over time, so that in any given country the roles of the institutions in such processes also change over time. This Section describes the institutions of the Government of Canada and their current roles in the fundamental processes of the Canadian political system.

In most countries, the legal framework within which political processes take place is provided through a constitution. The written Constitution of Canada is embodied in the British North America Acts. The first of these Acts, passed by the British Parliament in 1867, not only established the institutions through which legislative, executive and judicial powers are exercised in Canada but also established a federal form of government. A central government — the federal government — has legislative jurisdiction primarily over matters of national concern and over those matters not otherwise assigned to the provinces. The 10 provincial governments are assigned specific areas of legislative jurisdiction, including municipal institutions.

In Canada, there is a fusion of the executive and legislative powers as there is in Britain. Formal executive power in Canada is vested in the Queen, whose authority is delegated to the Governor General, her representative. Legislative power is vested in the Parliament of Canada which consists of the Queen, an appointed upper house called the Senate and a lower house called the House of Commons, elected by universal adult suffrage. The independence of the judiciary is safeguarded through the constitutional provision that superior court judges are appointed by the Governor in Council (i.e. by the Governor General on advice of the Cabinet) and that they hold office during good behaviour and are removable only by the Governor General on address of the Senate and the House of Commons. In other words, judges cannot be removed unless both Houses of Parliament, the Cabinet and the Governor General agree.

In the Canadian system of government, where the executive is part of Parliament, democratic principles could not be adhered to without the constitutional convention that the government is responsible to the House of Commons. When the government loses the confidence of the House of Commons, it must resign or the Prime Minister must request the Governor General to dissolve Parliament and call a general election. Although there are conventions that help in deciding when the government has lost the confidence of the House, all doubt is removed when the government is defeated on a motion on which it had explicitly staked its life or when a motion of non-confidence in the government is passed. If the government resigns, the Governor General can call on the Leader of the Opposition (who is usually the leader of the political party that has the second largest number of seats in the House of Commons) to form a new government. If a government that has lost the confidence of the House of Commons and is granted a dissolution is defeated in the ensuing general election and if no clear majority is elected, the government has two choices — it can remain in office and seek the confidence of the House of Commons when it meets or it can resign at once. If it resigns, the Governor General will normally ask the leader of another party, usually the one that has won the most seats, to form a new government. The primary responsibility of the Governor General in either circumstance is to provide the nation with a government capable of carrying on with the support of the House of Commons.

The Prime Minister and his Cabinet, who with one or two exceptions are members of the House of Commons, are, formally speaking, the Queen's advisers. In fact there are virtually no significant actions that can be taken by the Queen or her representative in Canada, the Governor General, without the advice of the Cabinet. The Prime Minister and his Cabinet determine executive policies and are responsible for them to the House of Commons. The Queen and the Governor General have the traditional rights to be consulted, to encourage and to warn the government.

The demands of Canadian citizens are directed primarily to members of Parliament, directly to Cabinet Ministers or indirectly to Cabinet Ministers through the Public Service. These demands may originate from individuals, political parties or pressure groups; members of Parliament, Cabinet Ministers and public servants may take the initiative in suggesting the adoption of policies and programs in the public interest. Although the roles performed by Parliament, the Public Service and the Cabinet cannot be defined with absolute precision, the following stylized description deals with the most obvious and primary roles of each in the Canadian political system.

The determination of public policy rests with the Cabinet but begins generally with the formulation of policy by the individual Ministers. Working in co-operation with public servants, a Minister formulates policy proposals for consideration by his colleagues in the Cabinet. The Cabinet studies the policies submitted and chooses those it wishes to implement. The Cabinet may itself formulate policies, but it may also decide to select a policy from among the alternatives submitted. The establishment of a Cabinet committee system that operates on a functional basis and, more especially, the establishment of the Cabinet Committee on Priorities and Planning represent attempts to enhance the capacity of Cabinet in its primary role of policy determination and priority setting.

In conformity with the principle of the rule of law, all executive acts must be authorized by law, and laws are enacted by Parliament. Executive acts may be carried out under a statute which specifies how a policy is to be implemented, or under a statute which authorizes the Governor in Council to undertake specific acts. Much of the activity of the Public Service is authorized through the yearly enactment of Appropriation Acts approving the expenditure of public funds for specific purposes. Apart from its concern with the appropriation of funds, Parliament is concerned with the discussion and authorization of policy submitted for its approval by the government. The approval of these policies is accomplished mainly through the enactment of legislation. In an attempt to enable the House of Commons to perform this role more efficiently numerous changes in the rules of procedure were adopted in January 1969, and are now included in the Standing Orders of the House of Commons.

The most significant feature of these processes is that Cabinet Ministers, who constitute the government, have seats in Parliament and thus share in the exercise of the legislative power. In fact, the majority of legislation enacted by Parliament is submitted by the government; the British North America Act provides that all financial measures must originate in the House of Commons.

The role of the judiciary is to apply the laws enacted by Parliament. In the Canadian system of government, Parliament is supreme. This means, among other things, that the judiciary must apply the law as Parliament has enacted it and cannot declare laws to be unconstitutional if they are within the legislative jurisdiction of Parliament or of the legislature that enacted them.

The administration of legislation and of the government's policies is carried out through a Public Service comprising employees organized as of 1975 in 25 departments of government and a large number of special boards, commissions and Crown corporations or other agencies. Legislation and tradition have combined to develop a non-partisan Public Service, the tenure of whose employees is unaffected by changes in government. The only direct contact between public servants and Parliament occurs when they are called to appear as witnesses before parliamentary committees. On these occasions, public servants do not, by convention, express opinions on public policy but usually appear as experts and to explain existing policy. The public servants who head agencies such as the Public Service Commission, the Office of the Auditor General, the Office of the Commissioner of Official Languages, the Library of Parliament or the Office of the Chief Electoral Officer are responsible directly to Parliament. They are not subject to direction by the government on matters of policy and may appear before parliamentary committees to explain the policies of their agencies.

The growth in number, variety and complexity of the demands placed on the government requires it not only to adjust its policies in response to these demands but, with increasing frequency, to make significant changes in the organization of the Public Service so that the required policies can be properly implemented. Major reorganization of the Public Service has been authorized by the passage of a series of Government Organization Acts in 1966, 1969 and 1970.

3.1.1 The Executive

The Crown. The British North America (BNA) Act of 1867 (Sect. 9) provides that “the Executive Government and authority of and over Canada is . . . vested in the Queen”. The functions of the Crown (that is, the formal executive represented by the Queen), which are substantially the same as those of the Crown in relation to the British government, are discharged in Canada by the Governor General.

The Sovereign. Since Confederation Canada has had six sovereigns: Victoria, Edward VII, George V, Edward VIII, George VI and Elizabeth II. The present sovereign, Queen Elizabeth, is not only Queen of Canada but of several other countries in the Commonwealth. Her Majesty’s title for Canada was approved by Parliament and established by a Royal proclamation on May 28, 1953: Elizabeth the Second, by the Grace of God of the United Kingdom, Canada and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith.

From time to time the Queen personally discharges the functions of the Crown in respect of Canada on occasions such as the appointment of the Governor General, which Her Majesty does on the recommendation of the Prime Minister of Canada. On the occasion of a Royal visit, the Queen may participate in those ceremonies that are normally carried out in her name by the Governor General, such as the opening and dissolution of Parliament, the assent to bills passed by the House of Commons and the Senate, and the granting of a general amnesty.

The Governor General is the representative of the Crown in Canada. The present incumbent, The Right Honourable Jules Léger, is the 21st Governor General since Confederation. He was appointed by Queen Elizabeth on October 5, 1973 and took office on January 14, 1974. Constitutionally, the Queen of Canada is the Canadian head of state but the Governor General fulfils her role in this regard on her behalf. The letters patent revised and re-issued under the Great Seal of Canada on October 1, 1947 authorized the Governor General “to exercise on the advice of his Canadian ministers, all Her Majesty’s powers and authorities in respect of Canada”.

Following are the Governors General of Canada since Confederation, with dates of appointment:

The Viscount Monck of Ballytrammon, June 1, 1867
The Baron Lisgar of Lisgar and Bailieborough, December 29, 1868
The Earl of Dufferin, May 22, 1872
The Marquis of Lorne, October 5, 1878
The Marquis of Lansdowne, August 18, 1883
The Baron Stanley of Preston, May 1, 1888
The Earl of Aberdeen, May 22, 1893
The Earl of Minto, July 30, 1898
The Earl Grey, September 26, 1904
Field Marshal HRH The Duke of Connaught, March 21, 1911
The Duke of Devonshire, August 19, 1916
General The Baron Byng of Vimy, August 2, 1921
The Viscount Willingdon of Ratton, August 5, 1926
The Earl of Bessborough, February 9, 1931
The Baron Tweedsmuir of Elsfield, August 10, 1935
Major General The Earl of Athlone, April 3, 1940
Field Marshal The Viscount Alexander of Tunis, March 21, 1946
The Right Honourable Vincent Massey, January 24, 1952
General The Right Honourable Georges P. Vanier, August 1, 1959
The Right Honourable Roland Michener, March 29, 1967
The Right Honourable Jules Léger, October 5, 1973.

One of the most important responsibilities of the Governor General is to ensure that the country always has a government. If the office of the Prime Minister becomes vacant because of death, resignation or defeat of the government in the House of Commons, the Governor General must see that the office of the Prime Minister is filled and that a new government is formed.

As the representative of the Queen — one of the three elements of the Canadian Parliament, the others being the Senate and the House of Commons — the Governor General summons, prorogues and dissolves Parliament on the advice of the Prime Minister. He signs Orders in Council, commissions and many other state documents, and gives his assent to bills

that have been passed in both Houses of Parliament and which thereby become acts of Parliament with the force of law (unless Parliament prescribes specifically otherwise). Like the Queen, in virtually all cases constitutional convention binds him to carry out these duties in accordance with the advice of his responsible Ministers. Should he not wish to accept their advice, and should they maintain that advice, his only alternative is to replace the existing government with a new government. This alternative could be exercised only if, at the same time, the principle of responsible government could be upheld. This means that the Governor General's discretion in choosing another government is strictly limited to a situation in which a person other than the existing Prime Minister could command the confidence of the House of Commons.

Canadian honours system. An exclusively Canadian honours system was introduced in 1967 with the establishment of the Order of Canada. The honours system was enlarged in 1972 with the addition of the Order of Military Merit and three decorations to be awarded in recognition of acts of bravery. A complete description of these awards and a list of the recipients during 1974 are given in Appendix 4.

The Privy Council. The BNA Act of 1867 (Sect. 11) provides for "a council to aid and advise in the Government of Canada, to be styled the Queen's Privy Council for Canada...". The Council that in fact advises the Queen's representative, the Governor General, is the Committee of the Privy Council whose membership is identical to that of Cabinet.

Membership in the Privy Council is for life and includes Cabinet Ministers of the government of the day, former Cabinet Ministers, various members of the Royal Family, past and present Commonwealth Prime Ministers, Premiers of provinces, former Speakers of the Senate and the House of Commons of Canada and a few distinguished civilians. It is a condition of office that all Ministers must first be sworn to the Privy Council. A member of the Privy Council of Canada is styled "Honourable" and may use the initials PC after his name. A member of the Privy Council of Britain is styled "Right Honourable". The Governor General, the Chief Justice of Canada and the Prime Minister of Canada automatically assume the title "Right Honourable" when they take office.

The Privy Council as a whole has met on only a few ceremonial occasions; its constitutional responsibilities to advise the Crown on matters respecting the Government of Canada are discharged exclusively by the Committee of the Privy Council, which is composed of the members of the Ministry of the day known informally as the Cabinet. The legal instruments through which executive authority is exercised are called Orders in Council. The procedure is for the Committee of the Privy Council to make a submission to the Governor General for his approval which he is obliged to give in almost all circumstances; with this approval, the submission becomes an Order in Council. Meetings of the Committee of the Privy Council or a sub-committee of this Committee are held without formal ceremony.

The office of the President of the Privy Council was formerly occupied, more often than not, by the Prime Minister but from time to time, especially in recent years, it has been occupied by another Minister. On July 5, 1968, the Prime Minister explained that the incumbent of the office of President of the Privy Council would also be the Government Leader in the House of Commons, with the broad responsibility of directing the business of the House, including such matters as supervision of the government's replies to questions in the House and of parliamentary returns in general, and also a special responsibility on behalf of the government of ensuring that Parliament, through its operations and organization of business, can effectively discharge its vital role in the Canadian political process under the increasing pressure of modern government.

The following, with the dates when they were sworn in, were members of the Queen's Privy Council for Canada as at December 31, 1974:

Hon. Thomas Alexander Crerar, October 12, 1917
 Hon. William Earl Rowe, August 30, 1935
 Hon. Joseph Thorarinn Thorson, June 11, 1941
 Hon. Lionel Chevrier, April 18, 1945
 Hon. Paul Joseph James Martin, April 18, 1945
 Hon. Douglas Charles Abbott, April 18, 1945
 Hon. Milton Fowler Gregg, September 2, 1947
 Hon. Stuart Sinclair Garson, November 15, 1948
 Hon. Hugues Lapointe, August 25, 1949

Hon. Gabriel-Édouard Rinfret, August 25, 1949
 Hon. Walter Edward Harris, January 18, 1950
 Hon. James Sinclair, October 15, 1952
 Hon. William Ross Macdonald, May 12, 1953
 Hon. John Whitney Pickersgill, June 12, 1953
 Hon. Jean Lesage, September 17, 1953
 Hon. George Carlyle Marler, July 1, 1954
 Hon. Paul Theodore Hellyer, April 26, 1957
 Rt. Hon. John George Diefenbaker, June 21, 1957

- Hon. Howard Charles Green, June 21, 1957
 Hon. Donald Methuen Fleming, June 21, 1957
 Hon. George Hees, June 21, 1957
 Hon. Léon Balcer, June 21, 1957
 Hon. George Randolph Pearkes, June 21, 1957
 Hon. Gordon Churchill, June 21, 1957
 Hon. Edmund Davie Fulton, June 21, 1957
 Hon. Douglas Scott Harkness, June 21, 1957
 Hon. Ellen Louks Fairclough, June 21, 1957
 Hon. John Angus MacLean, June 21, 1957
 Hon. Michael Starr, June 21, 1957
 Hon. William McLean Hamilton, June 21, 1957
 Hon. William Joseph Browne, June 21, 1957
 Hon. Jay Waldo Monteith, August 22, 1957
 Hon. Francis Alvin George Hamilton, August 22, 1957
 HRH The Prince Philip, Duke of Edinburgh, October 14, 1957
 Hon. Henri Courtemanche, May 12, 1958
 Hon. David James Walker, August 20, 1959
 Hon. Joseph-Pierre-Albert Sévigny, August 20, 1959
 Hon. Hugh John Flemming, October 11, 1960
 Hon. Noël Dorion, October 11, 1960
 Hon. Walter Dinsdale, October 11, 1960
 Hon. Jacques Flynn, December 28, 1961
 Hon. Paul Martineau, August 9, 1962
 Hon. Richard Albert Bell, August 9, 1962
 Rt. Hon. Roland Michener, October 15, 1962
 Hon. Marcel-Joseph-Aimé Lambert, February 12, 1963
 Hon. Théogène Ricard, March 18, 1963
 Hon. Frank Charles McGee, March 18, 1963
 Hon. Martial Asselin, March 18, 1963
 Hon. Walter Lockhart Gordon, April 22, 1963
 Hon. Mitchell William Sharp, April 22, 1963
 Hon. Azellus Denis, April 22, 1963
 Hon. George James McLraith, April 22, 1963
 Hon. William Moore Benidickson, April 22, 1963
 Hon. Arthur Laing, April 22, 1963
 Hon. Maurice Lamontagne, April 22, 1963
 Hon. Lucien Cardin, April 22, 1963
 Hon. Allan Joseph MacEachen, April 22, 1963
 Hon. Jean-Paul Deschatelets, April 22, 1963
 Hon. Hédard Robichaud, April 22, 1963
 Hon. John Watson MacNaught, April 22, 1963
 Hon. Roger Teillet, April 22, 1963
 Hon. Judy V. LaMarsh, April 22, 1963
 Hon. Charles Mills Drury, April 22, 1963
 Hon. John Robert Nicholson, April 22, 1963
 Hon. Harry Hays, April 22, 1963
 Hon. John Joseph Connolly, February 3, 1964
 Hon. Maurice Sauvé, February 3, 1964
 Hon. Yvon Dupuis, February 3, 1964
 Hon. George Stanley White, June 25, 1964
 Hon. Edgar John Benson, June 29, 1964
 Hon. Léo Alphonse Joseph Cadieux, February 15, 1965
 Hon. Lawrence T. Pennell, July 7, 1965
 Hon. Jean-Luc Pepin, July 7, 1965
 Hon. Alan Aylesworth Macnaughton, October 25, 1965
 Hon. Jean Marchand, December 18, 1965
 Hon. John James Greene, December 18, 1965
 Hon. Joseph Julien Jean-Pierre Côté, December 18, 1965
 Hon. John Napier Turner, December 18, 1965
 Hon. Maurice Bourget, February 22, 1966
 Rt. Hon. Pierre Elliott Trudeau, April 4, 1967
 Hon. Joseph-Jacques-Jean Chrétien, April 4, 1967
 Hon. Pauline Vanier, April 11, 1967
 Hon. John Parmenter Robarts, July 5, 1967
 Hon. Louis-J. Robichaud, July 5, 1967
 Hon. Dufferin Roblin, July 5, 1967
 Hon. William Andrew Cecil Bennett, July 5, 1967
 Hon. Alexander B. Campbell, July 5, 1967
 Hon. Ernest Charles Manning, July 5, 1967
 Hon. Joseph Robert Smallwood, July 5, 1967
 Hon. Robert L. Stanfield, July 7, 1967
 Rt. Hon. John Robert Cartwright, September 4, 1967
 Hon. Charles Ronald McKay Granger, September 25, 1967
 Hon. Bryce Stuart Mackasey, February 9, 1968
 Hon. Donald Stovel Macdonald, April 20, 1968
 Hon. John Carr Munro, April 20, 1968
 Hon. Gérard Pelletier, April 20, 1968
 Hon. Jack Davis, April 26, 1968
 Hon. Horace Andrew Olson, July 6, 1968
 Hon. Jean-Eudes Dubé, July 6, 1968
 Hon. Stanley Ronald Basford, July 6, 1968
 Hon. Donald Campbell Jamieson, July 6, 1968
 Hon. Eric William Kierans, July 6, 1968
 Hon. Robert Knight Andras, July 6, 1968
 Hon. James Armstrong Richardson, July 6, 1968
 Hon. Otto Emil Lang, July 6, 1968
 Hon. Sydney John Smith, October 10, 1968
 Hon. Herbert Eser Gray, October 20, 1969
 Hon. Robert Douglas George Stanbury, October 20, 1969
 Rt. Hon. Joseph Honoré Gérald Fauteux, March 23, 1970
 Hon. Jean-Pierre Goyer, December 22, 1970
 Hon. Alastair William Gillespie, August 11, 1971
 Hon. Martin Patrick O'Connell, August 11, 1971
 Hon. Patrick Morgan Mahoney, January 21, 1972
 Hon. Stanley Haidasz, November 27, 1972
 Hon. Eugene F. Whelan, November 27, 1972
 Hon. Warren Allmand, November 27, 1972
 Hon. J. Hugh Faulkner, November 27, 1972
 Hon. André Ouellet, November 27, 1972
 Hon. Daniel J. MacDonald, November 27, 1972
 Hon. Marc Lalonde, November 27, 1972
 Hon. Jeanne Sauvé, November 27, 1972
 Rt. Hon. Bora Laskin, January 7, 1974
 Hon. Lucien Lamoureux, August 8, 1974
 Hon. Raymond Joseph Perrault, August 8, 1974
 Hon. Barnett Jerome Danson, August 8, 1974
 Hon. J. Judd Buchanan, August 8, 1974
 Hon. Roméo LeBlanc, August 8, 1974
 Hon. Muriel McQueen Fergusson, November 7, 1974.

The Prime Minister is the leader of the political party requested by the Governor General to form the government, which almost always means that he is the leader of the party with the strongest representation in the House of Commons. His position is one of exceptional authority stemming in part from the success of the party at an election. The Prime Minister chooses his Cabinet. When a member of Cabinet resigns, the remainder of the Cabinet is undisturbed; when the Prime Minister vacates his office, this act normally carries with it the resignation of all those in the Cabinet.

One source of the authority of the Prime Minister lies in his prerogative to recommend the dissolution of Parliament. This prerogative, which in most circumstances permits him to precipitate an election, is a source of considerable power both in his dealings with his colleagues and with the opposition parties in the House of Commons. The Prime Minister is also responsible for the organization of the Cabinet and its committees; for the organization and functions of his own, the Privy Council, and Federal-Provincial Relations offices; and for the allocation of responsibilities between Ministers.

Another source of the Prime Minister's authority derives from the appointments which he recommends including Privy Councillors, Cabinet Ministers, Lieutenant Governors of the provinces, provincial administrators, Speakers of the Senate, Chief Justices of all courts, Senators and certain senior executives of the Public Service. The Prime Minister also recommends the appointment of a new Governor General to the Sovereign, although this normally follows consultation with his Cabinet.

Following are the Prime Ministers since Confederation, with dates of administrations:

- Rt. Hon. Sir John Alexander Macdonald, July 1, 1867 — November 5, 1873
- Hon. Alexander Mackenzie, November 7, 1873 — October 16, 1878
- Rt. Hon. Sir John Alexander Macdonald, October 17, 1878 — June 6, 1891
- Hon. Sir John Joseph Caldwell Abbott, June 16, 1891 — November 24, 1892
- Rt. Hon. Sir John Sparrow David Thompson, December 5, 1892 — December 12, 1894
- Hon. Sir Mackenzie Bowell, December 21, 1894 — April 27, 1896
- Rt. Hon. Sir Charles Tupper, May 1, 1896 — July 8, 1896
- Rt. Hon. Sir Wilfrid Laurier, July 11, 1896 — October 6, 1911
- Rt. Hon. Sir Robert Laird Borden, October 10, 1911 — October 12, 1917 (Conservative Administration)
- Rt. Hon. Sir Robert Laird Borden, October 12, 1917 — July 10, 1920 (Unionist Administration)
- Rt. Hon. Arthur Meighen, July 10, 1920 — December 29, 1921 (Unionist — National Liberal and Conservative Party)
- Rt. Hon. William Lyon Mackenzie King, December 29, 1921 — June 28, 1926
- Rt. Hon. Arthur Meighen, June 29, 1926 — September 25, 1926
- Rt. Hon. William Lyon Mackenzie King, September 25, 1926 — August 6, 1930
- Rt. Hon. Richard Bedford Bennett, August 7, 1930 — October 23, 1935
- Rt. Hon. William Lyon Mackenzie King, October 23, 1935 — November 15, 1948
- Rt. Hon. Louis Stephen St-Laurent, November 15, 1948 — June 21, 1957
- Rt. Hon. John George Diefenbaker, June 21, 1957 — April 22, 1963
- Rt. Hon. Lester Bowles Pearson, April 22, 1963 — April 20, 1968
- Rt. Hon. Pierre Elliott Trudeau, April 20, 1968 — . . .

The Cabinet. The Cabinet's primary responsibility in the Canadian political system is to determine priorities among the demands expressed by the people and to define policies to meet those demands. The Cabinet is a committee of Ministers chosen by the Prime Minister, generally from among members of the House of Commons, although one or two Cabinet Ministers are usually chosen from the Senate including the Leader of the Government in the Senate. It is unusual for a senator to head a department of government because the Constitution provides that measures for appropriating public funds or imposing taxes must originate in the House of Commons. If a senator headed a department another Minister in the House of Commons would have to speak on his behalf in respect of its affairs.

As of January 1976, the following were members of the 20th Ministry:

- Prime Minister, Rt. Hon. Pierre Elliott Trudeau
- President of the Queen's Privy Council for Canada, Hon. Mitchell Sharp
- Secretary of State for External Affairs, Hon. Allan Joseph MacEachen
- Minister of State for Science and Technology and Minister of Public Works, Hon. Charles Mills Drury
- Minister of the Environment, Hon. Jean Marchand
- President of the Treasury Board, Hon. Jean Chrétien
- Postmaster General, Hon. Bryce Stuart Mackasey
- Minister of Finance, Hon. Donald Stovel Macdonald

Minister of Labour, Hon. John Carr Munro
Minister of Justice and Attorney General of Canada, Hon. Stanley Ronald Basford
Minister of Industry, Trade and Commerce, Hon. Donald Campbell Jamieson
Minister of Manpower and Immigration, Hon. Robert Knight Andras
Minister of National Defence, Hon. James Armstrong Richardson
Minister of Transport, Hon. Otto Emil Lang
Minister of Supply and Services, Hon. Jean-Pierre Goyer
Minister of Energy, Mines and Resources, Hon. Alastair William Gillespie
Minister of Agriculture, Hon. Eugene Francis Whelan
Solicitor General of Canada, Hon. W. Warren Allmand
Secretary of State of Canada, Hon. James Hugh Faulkner
Minister of Consumer and Corporate Affairs, Hon. André Ouellet
Minister of Veterans Affairs, Hon. Daniel Joseph MacDonald
Minister of National Health and Welfare, Hon. Marc Lalonde
Minister of Communications, Hon. Jeanne Sauvé
Leader of the Government in the Senate, Hon. Raymond Joseph Perrault
Minister of State for Urban Affairs, Hon. Barnett Jerome Danson
Minister of Indian Affairs and Northern Development, Hon. J. Judd Buchanan
Minister of State (Fisheries), Hon. Roméo LeBlanc
Minister of Regional Economic Expansion, Hon. Marcel Lessard
Minister of National Revenue, Hon. Jack Sydney Cullen.

Each Cabinet Minister usually assumes responsibility for one of the departments of government, although a Minister may hold more than one portfolio at the same time or he may hold one or more portfolios and one or more acting portfolios. A Minister without portfolio may be invited to join the Cabinet because the Prime Minister wishes to have him in the Cabinet without the heavy duties of running a department, or he may be invited to join the Cabinet to provide a suitable balance of regional representation, or for such other reason as the Prime Minister sees fit. Because of the cultural and geographical diversity that exists in Canada, it is necessary for the Prime Minister to give close attention to the representational aspect of his Cabinet.

With the enactment of the Ministries and Ministers of State Act (Government Organization Act, 1970), five categories of Ministers of the Crown may be identified: departmental Ministers, Ministers with special Parliamentary responsibilities, Ministers without portfolio, and two types of Ministers of state. Ministers of state “for designated purposes” may head a “Ministry of State” created by proclamation. They are charged with responsibilities for developing new and comprehensive policies in areas where the development of such policies is of particular urgency and importance and have a mandate effectively determined by the Governor in Council which would be of such duration as to enable them to come to grips with the policy problems assigned to them. They may receive powers, duties and functions and exercise supervision and control of relevant elements of the Public Service, and may seek parliamentary appropriations independently of any Minister to cover the cost of their staff and operations. Other Ministers of state, usually “undesigned”, may be appointed to assist a departmental Minister in the discharge of his responsibilities. They may receive statutory powers, duties and functions and are limited in number by the appropriations that Parliament is willing to pass. They receive the same salary as a Minister without portfolio, as provided for in the estimates of the Minister with whom they are associated. All Ministers are appointed on the advice of the Prime Minister by Commissions of Office issued by the Governor General under the Great Seal of Canada, to serve at pleasure, and to be accountable to Parliament as members of the government and for any responsibility that might be assigned to them by law or otherwise.

In Canada, almost all executive acts of the government are carried out in the name of the Governor in Council. The Committee of the Privy Council makes submissions to the Governor General for his approval, and he is bound by the Constitution in nearly all circumstances to accept them. About 3,000 such Orders in Council were enacted in 1975 compared with 3,417 in 1974. Although some were fairly routine and did not require much discussion in Cabinet of the policy underlying them, others were of major significance and required extensive deliberation, sometimes covering months of meetings of officials and Cabinet committees, as well as of the full Cabinet.

In addition to the determination of the policy underlying the executive acts of the government, there are hundreds of other policy issues that must be resolved during the course of a year. Cabinet must consider and approve the policy underlying each piece of proposed legislation. After it is drafted proposed legislation must be examined in detail. Recently, between 40 and 60 bills have been considered by Cabinet during the course of a parliamentary session. Proposals for sweeping reform of large areas of government organization or administration and policy to be adopted in fundamental constitutional changes or at a major international conference are among the issues which, on occasion, demand this extensive and detailed consideration.

The Cabinet committee system. It is clear that the nature and volume of policy issues to be decided on by Cabinet do not lend themselves to discussion by 25 or 30 Ministers. The first Cabinet committee system was established after the outbreak of World War II. Since then, particularly in recent years, growing demands placed on the executive have further stimulated the delegation of some Cabinet functions to its committees.

Cabinet committees tend to have a membership of fewer than 10 Ministers and therefore provide a forum capable of ensuring thorough study of policy proposals. The membership of Cabinet committees is confidential and the same rules of secrecy that apply to the deliberations of Cabinet apply to those of Cabinet committees. Otherwise, these committees might develop an importance and authority of their own which would be inconsistent with the principle of the collective responsibility of Ministers. The Prime Minister determines the establishment of Cabinet committees, their membership, and terms of reference. Ministers may invite one or two officials to act as advisers during Cabinet committee meetings. The secretariats of the Cabinet committees are provided by the Privy Council Office and the Secretary of a Cabinet committee is usually also an Assistant Secretary to the Cabinet. Treasury Board, which is a Cabinet committee — or more precisely a sub-committee of the Committee of the Privy Council — is the only exception; it has its own secretariat headed by a secretary who has the status of a Deputy Minister.

Under the direction of the Prime Minister, the Secretary to the Cabinet prepares agenda and refers memoranda to Cabinet to the appropriate committee for study and report to the full Cabinet. Except where the Prime Minister instructs otherwise, all memoranda to Cabinet are submitted over the signature of the Minister concerned.

The terms of reference of Cabinet committees cover virtually the total area of government responsibility. All memoranda to Cabinet are first considered by a Cabinet committee, except when they are of exceptional urgency or when the Prime Minister directs otherwise, in which case an item may be considered immediately by the full Cabinet.

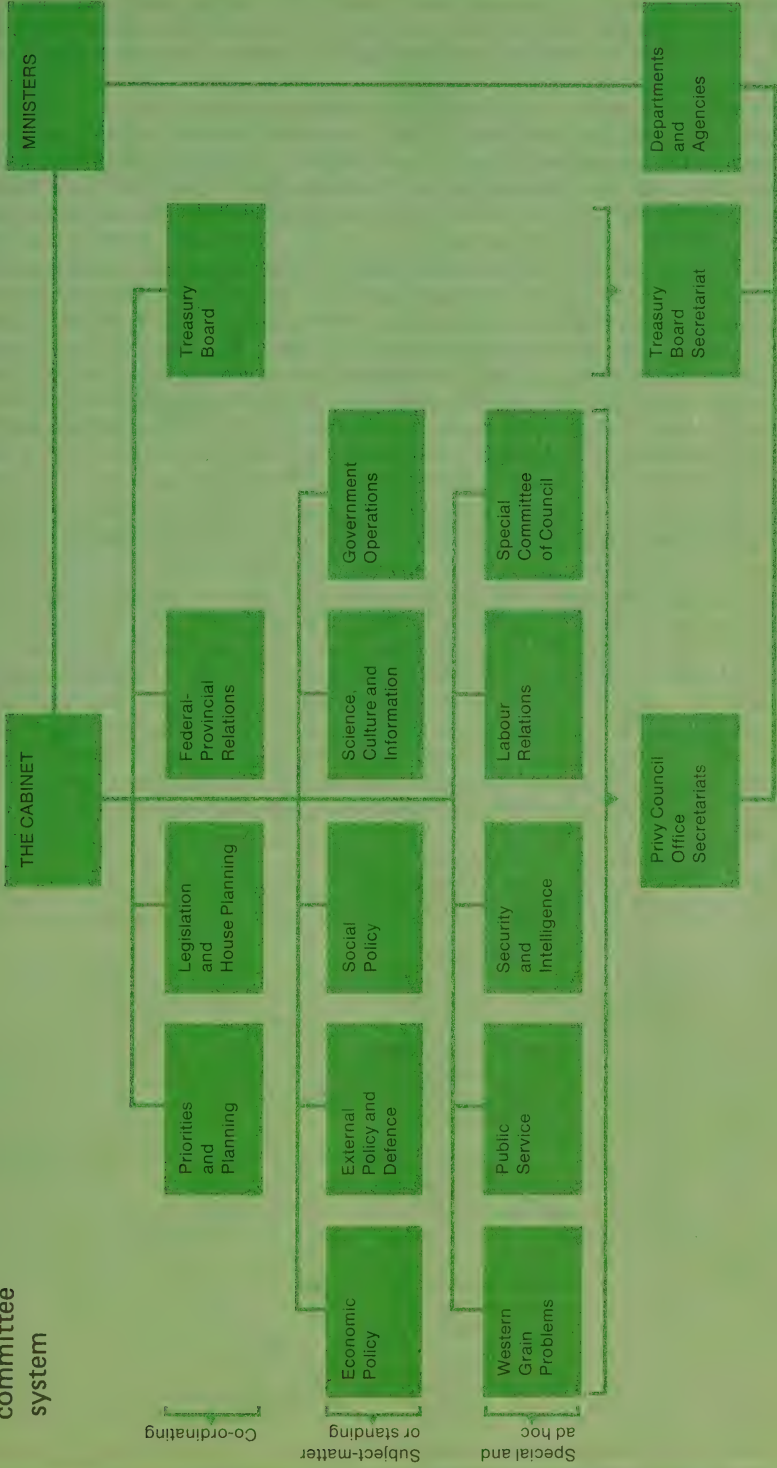
In 1975 there were four co-ordinating committees: Priorities and Planning; Legislation and House Planning; Federal-Provincial Relations; and Treasury Board and five subject-matter committees: Economic Policy; External Policy and Defence; Social Policy; Science, Culture and Information; and Government Operations. These committees meet regularly.

In addition there are five special committees of the Cabinet that meet as required: the Special Committee of Council (which considers all submissions to the Governor in Council on behalf of the Committee of the Privy Council), and the Cabinet committees on the Public Service, Security and Intelligence, Labour Relations and Western Grain Problems. The accompanying chart indicates the relationship of these committees to the Cabinet process.

Although the importance of the Cabinet committee system may vary from government to government, evidence of the utility of the system is the growing reliance that has been placed on Cabinet committees since the end of World War II. The following is a brief outline of the involvement of Cabinet and Cabinet committees in respect of a piece of legislation that the government ultimately introduces in the House of Commons or the Senate.

On the initiative of a Minister a policy proposal is prepared, the implementation of which will require new legislation or the amendment of existing legislation. The proposal, over the Minister's signature, is addressed formally to Cabinet, but is considered first by the appropriate subject-matter committee. If approval is given, the proposal goes forward for confirmation or further consideration by Cabinet. If Cabinet confirms the Committee's decision or makes a revision, the Department of Justice is instructed by the Minister who made the proposal to prepare a draft bill expressing in legal terms the intent of the policy proposal. If the draft bill meets with the Minister's approval, he submits it to the Cabinet Committee on Legislation and House Planning where it is examined from a legal rather than a

The Cabinet committee system



policy point of view. If the Committee agrees that the bill is acceptable in all respects and could be introduced in Parliament, it so reports to Cabinet and Cabinet decides whether to confirm the Committee's decision. If confirmation is given, the Prime Minister initials the bill and it is then introduced either in the Senate or the House of Commons, depending on constitutional and political considerations.

The order and manner in which a bill is considered in Parliament is the responsibility of the President of the Privy Council and House Leader who negotiates these matters with his counterparts in the opposition parties. If a bill is to be introduced in the Senate, the House Leader will discuss questions such as timing and tactics with the Leader of the Government in the Senate, who in turn will negotiate consideration of the bill with his counterpart in the Senate.

The Privy Council Office is a secretariat providing staff support to the Select Committee of the Privy Council and to the Cabinet. For the purposes of the Financial Administration Act it is considered a department of government. The Privy Council Office provides secretariats to serve the Cabinet, the Select Committee of the Privy Council and their various sub-committees except the Cabinet Committee on Federal-Provincial Relations, which is served by the Federal-Provincial Relations Office. Since the Prime Minister is, in effect, chairman of the Cabinet, he is the Minister responsible for the Privy Council Office. The work of the Privy Council Office is directed by a public servant known as the Clerk of the Privy Council and Secretary to the Cabinet. He is the senior member of the Public Service.

Parliamentary secretaries. The Parliamentary Secretaries Act of June 1959 provided for the appointment of 16 parliamentary secretaries from among the members of the House of Commons to assist Ministers in the performance of their duties. That Act was amended by the Government Organization Act, 1970, which allows the number of parliamentary secretaries to equal the number of Ministers who hold offices listed in Section 4 of the Salaries Act (i.e. Ministers with departmental responsibilities, the Prime Minister, the Leader of the Government in the Senate and the President of the Privy Council). A parliamentary secretary works under the direction of his Minister and has no legal authority in respect of the department with which he is associated, nor is he given acting responsibility or any of the powers, duties and functions of a Minister in the event of his Minister's absence or incapacity. Parliamentary secretaries are appointed by the Prime Minister and hold office for 12 months.

As of October 1975, the following parliamentary secretaries, listed with their Ministers, were in office:

Jean Jacques Blais to President of the Privy Council
 Monique Begin to Secretary of State for External Affairs
 Keith Penner to Minister of State for Science and Technology
 Alexandre Cyr to Minister of Public Works
 Lloyd Francis to President of the Treasury Board
 Paul McRae to Postmaster General
 Jacques Trudel to Minister of Finance
 Fernand Leblanc to Minister of Labour
 Francis Fox to Minister of Justice and Attorney General of Canada
 Marcel Roy to Minister of Industry, Trade and Commerce
 Arthur Portelance to Minister of Manpower and Immigration
 Maurice Dionne to Minister of National Defence
 Ralph Goodale to Minister of Transport
 Walter Smith to Minister of Supply and Services
 Maurice Foster to Minister of Energy, Mines and Resources
 Irénée Pelletier to Minister of Agriculture
 Hugh Poulin to Solicitor General
 Coline Campbell to Secretary of State
 Art Lee to Minister of Consumer and Corporate Affairs
 Victor Railton to Minister of Veterans Affairs
 Bob Kaplan to Minister of National Health and Welfare
 George Baker to Minister of the Environment and Minister of Fisheries
 Jean-Robert Gauthier to Minister of State for Urban Affairs
 Iona Campagnolo to Minister of Indian Affairs and Northern Development
 James Fleming to Minister of Communications
 Cliff McIsaac to Minister of Regional Economic Expansion
 Claude Lajoie to Minister of National Revenue.

3.1.2 The Legislature

The federal legislative authority is vested in the Parliament of Canada consisting of the Queen, an upper house called the Senate, and the House of Commons. Bills may originate in either the Senate or the House, subject to the provisions of Section 53 of the British North America (BNA) Act, 1867, which provides that bills for the appropriation of any part of the public revenue or the imposition of any tax or impost shall originate in the House of Commons. Bills must pass both Houses and receive Royal Assent before becoming law. In practice, most public bills originate in the House of Commons although, at the request of the government, more have recently been introduced in the Senate in order that bills may be dealt with there while the Commons is engaged in other matters such as the debate on the Speech from the Throne. Private bills usually originate in the Senate. The Senate may delay, amend or even refuse to pass bills sent to it from the Commons, but differences are usually settled without serious conflict.

Section 91 of the BNA Acts, 1867 to 1964, assigns to the Parliament of Canada legislative authority in very clearly specified areas. These are discussed in detail in Chapter 2.

Under Section 95, the Parliament of Canada may make laws in relation to agriculture and immigration concurrently with provincial legislatures although federal legislation is paramount in the event of conflict. An amendment to the BNA Act in 1951 (Br. Stat. 1950-51, c.32) authorized the Parliament of Canada to make laws in relation to old age pensions in Canada subject to the proviso that no such law should affect the operation of any provincial laws in relation to old age pensions. By the BNA Act, 1964 this amendment was extended to permit the payment of supplementary benefits, including survivors and disability benefits irrespective of age, under a contributory pension plan.

The passage of legislation. If a bill is introduced in the House of Commons and approved there, it is then introduced in the Senate and follows a similar procedure. If a bill is first introduced in the Senate, the reverse procedure is followed. There are three types of bills: public bills introduced by the government; public bills introduced by private members of Parliament; and private bills introduced by private members of Parliament. Each type is treated in a slightly different manner, and there are even differences in procedure when the House deals with government bills introduced pursuant to “supply” and “ways and means” motions on the one hand, and other government bills on the other. The following outline describes the procedure for a government bill introduced in the House of Commons.

The sponsoring Minister gives notice that he intends to introduce a bill on a given subject. Not less than 48 hours later he moves for leave to introduce the bill and that the bill be given first reading. This is granted automatically because this first step does not imply approval of any sort and it is only after first reading that the bill is ordered printed for distribution to the members.

At a later sitting the Minister moves that the bill be given second reading and that it be referred to an appropriate committee of the House of Commons. A favourable vote on the motion for second reading represents approval of the bill in principle so there is often an extensive debate, which, according to the procedures of the House of Commons, must be confined to the principle of the bill. The debate culminates in a vote which, if favourable, results in the bill being referred to the appropriate committee of the House, where it is given clause-by-clause consideration.

At the committee stage, expert witnesses and interested parties may be invited to give testimony pertaining to the bill, and the proceedings may cover many weeks.

The House committee then prepares a report which it submits to the House of Commons which must then decide whether to accept the committee’s report, including any amendments that the committee has made to the bill. At the report stage any member may, on giving 24 hours notice, move an amendment to the bill, and all such amendments are debated and are usually put to a vote. Following that, a motion “that the bill be concurred in” or “that the bill, as amended, be concurred in”, is put to the vote.

Following this report stage, the Minister moves that the bill be given third reading and passage. Debate of this motion is limited to whether the bill should be given third reading. Amendments are permitted at this stage but they must be of a general nature, similar to those allowed on second reading. If the vote is favourable, the bill is then introduced in the Senate where it goes through a somewhat similar process. Since each House has its own rules of

Passage of legislation



1. All money Bills must be introduced in the House of Commons.

procedure, the processes in the two may not be identical, and are indeed not identical at this time. At the end of this procedure, the bill is presented to the Governor General for Royal Assent and for his signature. Depending on the provisions in the bill itself it may come into force when it is signed by the Governor General, on an appointed day, or when it is officially proclaimed.

Duration and sessions of Parliaments. The length and sessions of the first to the 12th Parliaments, covering the period from Confederation to 1917, are given in the *1940 Canada Year Book*, p 46; of the 13th to the 17th Parliaments in the 1945 edition, p 53; of the 18th and 19th Parliaments in the 1957-58 edition, p 46; of the 20th to the 23rd Parliaments in the 1965 edition, p 65; and of the 24th to the 30th Parliaments in this edition, Table 3.1.

The Senate has grown from an original membership of 72 at Confederation, through the addition of members to represent new provinces and the general increase in population, to a total of 102 members; the latest change in representation was made when Newfoundland entered Confederation in 1949. The growth of representation in the Senate is summarized by province in Table 3.2.

Senators are appointed by the Governor General by instrument under the Great Seal of Canada. By constitutional usage the actual power of nominating senators resides in the Prime Minister whose advice the Governor General accepts in this regard. Until the passage of "An Act to make provision for the retirement of members of the Senate" (SC 1965, c.4), assented to on June 2, 1965, senators were appointed for life; that Act set 75 years as the age at which any person appointed to the Senate after the coming into force of the bill would cease to hold his place in the Senate.

In each of the four main areas of Canada (Ontario, Quebec, Atlantic provinces and Western provinces) except Quebec, senators represent the whole of the province for which they are appointed; in Quebec, one senator is appointed for each of the 24 electoral divisions of what was formerly Lower Canada. The deliberations of the Senate are presided over by a Speaker appointed by the Governor in Council (in effect by the government) and government business in the Senate is sponsored by the Government Leader in the Senate.

The powers of the Senate, in all respects except one, are co-extensive with those of the House of Commons. The one exception is that under the Canadian Constitution all "money bills", i.e. bills to impose taxes or appropriate public moneys, must originate in the House of Commons. The concurrence of the Senate is necessary before any piece of legislation, public or private, can become law. Government bills, other than money bills, may be introduced in either House. A substantial percentage of these are now introduced in the Senate where they may be freely discussed and amended and the House of Commons thus given the benefit of their prior scrutiny by the Senate.

The Senate also retains its traditional role in respect of legislation originating in the House of Commons, namely, to take a "sober second look" at such legislation and amend it if necessary; such amendments are often concurred in by the House of Commons. If representatives of the two Houses cannot resolve disagreements arising from Senate amendments, the legislation cannot be further considered.

The Senate provides a national forum for the discussion of public issues and the airing of grievances from any part of Canada. Through its own committees and its participation in joint committees of both Houses the Senate is particularly active in making studies in depth on matters of public concern.

As at December 31, 1974 the following were members of the Senate:

Speaker, Hon. Renaude Lapointe

Leader of the Government, Hon. Raymond J. Perrault

Leader of the Opposition, Hon. Jacques Flynn

Clerk of the Senate and Clerk of the Parliaments, Robert Fortier

Newfoundland

Michael G. Basha

Eric Cook

Chesley William Carter

James Duggan

William John Petten

Frederick William Rowe

Prince Edward Island

Florence Elsie Inman

Orville Howard Phillips

M. Lorne Bonnell

1 vacancy

Nova Scotia

Donald Smith
 Harold Connolly
 Frederick Murray Blois
 John Michael Macdonald
 Frank C. Welch
 Margaret Norrie
 Henry D. Hicks
 Bernard Alasdair Graham
 Augustus Irvine Barrow
 Ernest George Cottreau

New Brunswick

George Percival Burchill
 Muriel McQueen Fergusson
 Fred A. McGrand
 Edgar Fournier
 Charles Robert McElman
 Hervé J. Michaud
 Michel Fournier
 Louis-J. Robichaud
 Daniel Riley
 1 vacancy

Quebec

Léon Mercier Gouin
 Sarto Fournier
 Hartland de Montarville Molson
 J. Eugène Lefrançois
 Josie Alice Dinan Quart
 Louis Philippe Beaubien
 Jacques Flynn
 Maurice Bourget
 Louis P. Gélinas
 Azellus Denis
 Jean-Paul Deschatelets
 Alan Aylesworth Macnaughton
 J.G. Léopold Langlois
 Paul Desruisseaux
 Maurice Lamontagne
 Raymond Eudes
 Louis de Gonzague Giguère
 Paul C. Lafond
 H. Carl Goldenberg
 Renaude Lapointe
 Martial Asselin
 Jean-Pierre Côté
 Maurice Riel
 1 vacancy

Ontario

Salter Adrian Hayden
 Norman McLeod Paterson

John J. Connolly
 David A. Croll
 Joseph A. Sullivan
 Lionel Choquette
 M. Grattan O'Leary
 Allister Grosart
 David James Walker
 Rhéal Belisle
 Daniel Aiken Lang
 William Moore Benidickson
 Douglas Keith Davey
 Andrew Ernest Thompson
 Keith Laird
 Richard James Stanbury
 Eugene A. Forsey
 George James McIlraith
 John James Greene
 Joan Neiman
 John Morrow Godfrey
 3 vacancies

Manitoba

J. Campbell Haig
 Paul Yuzyk
 Douglas Donald Everett
 Gildas L. Molgat
 William C. McNamara
 1 vacancy

Saskatchewan

William Albert Boucher
 Alexander Hamilton McDonald
 Hazen Robert Argue
 Herbert Orville Sparrow
 Sidney L. Buckwold
 1 vacancy

Alberta

Donald Cameron
 Earl Adam Hastings
 Harry William Hays
 James Harper Prowse
 Ernest C. Manning
 1 vacancy

British Columbia

Ann Elizabeth Haddon Heath
 Edward M. Lawson
 George Clifford van Roggen
 Guy Williams
 Arthur Laing
 Raymond Joseph Perrault.

The House of Commons. Following the 1971 Census the number of members in the House of Commons was determined by the Representation Commissioner in accordance with Section 51 of the British North America Act. The number of seats awarded each province was as follows: Ontario 91, Quebec 72, Nova Scotia 10, New Brunswick 10, Manitoba 12, British Columbia 26, Prince Edward Island four, Saskatchewan 12, Alberta 19, Newfoundland six.

The Yukon Territory and the Northwest Territories were allocated one member each, bringing the total representation in the House of Commons to 264.

The readjustment of the federal electoral districts commenced during 1972 and 1973 in accordance with the Electoral Boundaries Readjustment Act and the last of 10 reports was

submitted to the House of Commons early in July 1973. After debate in the House of Commons it was agreed to suspend the readjustment until January 1, 1975. To this effect, Bill C-208 "Electoral Boundaries Readjustment Suspension Act" was given Royal Assent on July 27, 1973.

On December 20, 1974 Royal Assent was given to the Representation Act, 1974 which removes the temporary suspension of the Electoral Boundaries Readjustment Act and provides for representation in the House of Commons under a revised formula whereby the number of seats awarded each province is as follows: Ontario 95, Quebec 75, Nova Scotia 11, New Brunswick 10, Manitoba 14, British Columbia 28, Prince Edward Island four, Saskatchewan 14, Alberta 21, Newfoundland seven, the Northwest Territories two and the Yukon Territory one. The revised number of members in the House of Commons is now 282.

The number of representatives of each province elected at each of the 30 general elections since Confederation is given in Table 3.3. Historical data concerning representation may be found in the *1973 Canada Year Book*.

Salaries, allowances and pensions. Members of the Senate and House of Commons receive a sessional allowance at the rate of \$24,000 per annum. In addition, for each session of Parliament, they may be paid such travelling expenses between their place of residence or constituency and Ottawa as may be required for the performance of their duties. Senators receive an annual expense allowance of \$5,300 and members of the House of Commons receive an expense allowance of \$10,600 to \$14,475 dependent upon the electoral district represented; neither is subject to income tax and is payable monthly. Members of the House of Commons may receive up to \$7,200 annually for the payment of staff in their constituency, and up to \$2,400 annually for rental of premises in their constituency. The member of the Senate occupying the recognized position as Leader of the Government in the Senate is paid, in addition to his sessional allowance, an annual allowance of \$13,300 and the member of the Senate occupying the recognized position as Opposition Leader in the Senate is paid, in addition to his sessional allowance, an annual allowance of \$8,000; but if the Leader of the Government is in receipt of a salary under the Salaries Act the annual allowance is not paid. The remuneration of the Prime Minister is \$33,300 a year and of a Cabinet Minister and the Leader of the Opposition in the House of Commons \$20,000 a year in addition to the sessional and expense allowances each receives as a member of Parliament. A Minister without portfolio is paid \$7,500 a year in addition to the sessional and expense allowances; the latter is not taxable. The Chief Government Whip, the Chief Opposition Whip, the Opposition House Leader and each leader of a party having a recognized membership of 12 or more in the House of Commons, other than the Prime Minister and the Leader of the Opposition, receives an annual allowance of \$5,300 in addition to the above-noted sessional allowance. In addition to sessional and expense allowances, the Speaker of the Senate receives a salary of \$12,000 per annum, and the Speaker of the House of Commons receives a salary of \$20,000 per annum. The Deputy Speaker of the House of Commons receives a salary of \$8,000 per annum. The Speakers of the Senate and of the House of Commons are also entitled to \$3,000 in lieu of residence and the Deputy Speaker of the House of Commons an allowance of \$1,500 in lieu of residence; these allowances are not taxable. The Deputy Chairman of Committees receives an annual allowance of \$5,300. Parliamentary secretaries to Ministers of the Crown receive an annual allowance of \$5,300 a year, in addition to their sessional and expense allowances. A motor vehicle allowance of \$2,000 is paid to each Minister of the Crown and to the recognized Leader of the Opposition in the House of Commons, and a motor vehicle allowance of \$1,000 is paid to the Speakers of the Senate and of the House of Commons; these allowances are not taxable.

A member of Parliament contributes, by reservation, 7.5% of his sessional indemnity toward his retirement allowance, which is based on the average of the sessional indemnity received over the best consecutive six years of his pensionable service accumulated as follows: 3.5% of this six-year average for each of the first 10 years of pensionable service; 3% of this average for each of the next 10 years; 2% of this average for each of the next five years; and 2% of this average for each of the years of pensionable service earned by his contributions from salary for extra duties performed as a Minister, etc.; subject to an over-all maximum of 75% of that best six-year average. Survivor's benefits are as follows: 60% of the member's pension entitlement to the widow or widower; if there is a surviving parent, 10% of the

member's pension entitlement for each child up to three; and if there is no surviving parent, 20% of the member's pension entitlement for each child up to four. A member who was a member on March 31, 1970 had a year in which to elect to come under the plan described here or to remain under a previous plan, described in the *1969 Canada Year Book* p 75.

An Act to make provision for the retirement of members of the Senate (SC 1965, c.4) entitles a senator appointed after June 2, 1965 to become a contributor under the provisions of the Members of Parliament Retiring Allowances Act. Senators appointed prior to that date and who have not attained the age of 75 years, who elect under the provisions of this Act, are also entitled to become contributors. Under the provisions of the Retirement Act, as amended, a senator contributes, by reservation, 6% of \$12,000. A senator appointed before June 2, 1965 who (a) within one year of attaining the age of 75 years resigns his place in the Senate, or (b) resigns due to some permanent infirmity disabling him from performing his duties in the Senate, may be granted an annuity equal to \$8,000. The widow of a person granted such an annuity may receive an annuity equal to three fifths of the annuity to the ex-member of the Senate.

Every former Prime Minister who held office for four years will receive from the Consolidated Revenue Fund an allowance of two thirds of the annual salary provided for Prime Ministers under the Salaries Act, the allowance to commence when a Prime Minister ceases to hold that or any other office in Parliament, or attains the age of 70 years, whichever is the later, and to continue during his lifetime. The widow of a Prime Minister will receive an annual payment of one third of the allowance that was being paid or that would have been paid in the event that he died before receiving the allowance, such allowance to commence immediately after the death of her husband and to continue during her natural life or until her remarriage.

None of these allowances is payable while the recipient remains a senator or a member of the House of Commons.

The federal franchise. The present federal franchise laws are contained in the Canada Elections Act (RSC 1970, c.14, 1st Supp.) as amended by the Election Expenses Act (SC 1973-74, c.51). Generally, the franchise is conferred upon all Canadian citizens who have attained the age of 18 years and are ordinarily resident in the electoral district on the date fixed for the beginning of the enumeration at the election. Persons denied the right to vote are: the Chief Electoral Officer and the Assistant Chief Electoral Officer; judges appointed by the Governor in Council; the returning officer for each electoral district; persons undergoing punishment as inmates of any penal institution; persons restrained of their liberty of movement or deprived of the management of their property by reason of mental disease; and persons disqualified under any law relating to the disqualification of electors for corrupt or illegal practices.

The Special Voting Rules set out in Schedule II to the Canada Elections Act prescribe voting procedures for members of the Canadian Forces, for members of the federal Public Service posted abroad, and also for veterans in receipt of treatment or domiciliary care in certain institutions.

Electoral districts, voters on list, votes polled and names and addresses of members of the House of Commons elected at the 30th general election, July 8, 1974 are given in Table 3.4. Table 3.5 indicates voters on the lists and votes polled at federal general elections in 1965, 1968, 1972 and 1974.

3.1.3 The Judiciary

The Parliament of Canada is empowered by Section 101 of the British North America Act to provide for the constitution, maintenance and organization of a general Court of Appeal for Canada and for the establishment of any additional courts for the better administration of the laws of Canada. Under this provision Parliament has established the Supreme Court of Canada, the Federal Court of Canada and certain miscellaneous courts. A detailed discussion of the judiciary and legal system of Canada is presented in Chapter 2.

3.2 Federal government administration

3.2.1 Financial administration and control

The financial affairs of the Government of Canada are administered and controlled under the basic principle that no tax shall be imposed and no money spent without the authority of Parliament and that expenditures shall be made only for the purposes authorized by Parliament. The most important constitutional provisions relating to Parliament's control of finances are contained in the British North America (BNA) Act which provides that all federal taxing and appropriating measures must originate in the House of Commons. The government is responsible for introducing all money bills. Financial control is exercised through a budgetary system based on the principle that all the financial needs of the government for each fiscal year should be considered at one time so that both the current and prospective conditions of the public treasury may be clearly evident.

Estimates and appropriations. Co-ordination of the estimates process is carried out by Treasury Board. The Secretariat to this Board is a separate department of government, its Minister having the designation of President of the Treasury Board. In addition to the President, the Board consists of the Minister of Finance and four other Privy Councillors. Under the Financial Administration Act, the Board may act for the Privy Council in all matters relating to financial management (including estimates, expenditures, financial commitments, establishments, revenues and accounts), personnel management and general administrative policy in the Public Service.

Under present practice departments submit forecasts of their requirements about 12 months before the beginning of a new fiscal year. Forecasts of what they will require in each of the coming three years to maintain the current levels of service in each program are termed "A Budgets". At the same time departments submit forecasts of requirements for new activities or expansion in existing activities — "B Budgets". These proposals are reviewed by Treasury Board in the light of expenditure guidelines approved by the Cabinet which express the government's priorities. The Treasury Board Secretariat prepares recommendations for the budgetary and non-budgetary allocations to each program for Cabinet review. In August of the year preceding the fiscal year, departments are advised of the allocations approved by Cabinet. Departments then develop detailed estimates of their resource requirements for the new year against these approved allocations. These estimates are submitted at the end of October. Following review by Treasury Board and approval by Cabinet they are tabled in Parliament in February.

Main Estimates and Supplementary Estimates are referred to committees of the House of Commons. The timing of such referrals, the timing of committee reports and all other matters having to do with the business of supply in the House of Commons are regulated by the Standing Orders of the House (October 1969). The relevant provisions are briefly summarized here. Section 58 of the Standing Orders establishes three supply periods ending, respectively, not later than December 10, March 26 and June 30. The first supplementary estimates for a year are usually dealt with in the December 10 period and the final supplementary estimates in the March 26 period. In addition, interim supply (consisting of 3/12ths for all items in Main Estimates and extra 12ths for some items) is dealt with in the March 26 period. In the June 30 period, the House is asked to provide full supply on Main Estimates. The Standing Orders call for the referral of the new year Main Estimates to standing committees of the House by March 1 of the then expiring fiscal year and they must report back to the House not later than May 31 in the then current fiscal year. Supplementary Estimates are referred immediately after they are tabled, usually to the Miscellaneous Estimates Committee of the House, and dates by which reports must be made to the House are stipulated. In each supply period a number of days are allotted to the business of supply. Opposition motions have precedence over all government supply motions on allotted days and opportunities to put forward motions of non-confidence in the government are provided. On the last allotted day in each period, at 15 minutes before the ordinary time of adjournment, the Speaker interrupts the proceedings then in progress and puts every question necessary to dispose of any business relating to supply. No debate takes place after the Speaker has acted in this way and the Appropriation Acts then before the House must be voted on. These Appropriation Acts authorize payments out of the

Consolidated Revenue Fund of the amounts included in the estimates, whether main or supplementary, subject to the conditions stated in them.

In addition to the expenditure items included in the annual Appropriation Acts, there are a number of items, such as interest on the public debt and family allowances, authorized under other statutes. Although it is not necessary for Parliament to approve these items annually, they are included in the Main Estimates for purposes of information. Statutory provision also exists for the expenditure of public money in emergencies where no parliamentary appropriation is available. Under the Financial Administration Act, the Governor in Council, on the report of the President of the Treasury Board that there is no appropriation for the expenditure and on the report of the appropriate Minister that the expenditure is urgently required, may order a special warrant issued authorizing disbursement of the amount required. Such warrants may be issued only when Parliament is not in session and every warrant must be published in the *Canada Gazette* within 30 days of issue and reported to Parliament within 15 days of assembly. The Fire Losses Replacement Account Act also provides for emergency expenditures for the urgent repair or replacement of property destroyed or damaged by fire, where there is not sufficient money available in the appropriation for the service suffering loss. Such amounts must be charged subsequently to an appropriation or included in the estimates for the department or agency concerned and refunded to the Fire Losses Replacement Account.

In addition, disbursements are made for purposes not reflected in the budgetary accounts but recorded in the government's statement of assets and liabilities, such as loans to and investments in Crown corporations, loans to international organizations and to national, provincial and municipal governments, and loans to veterans. There are also disbursements in connection with deposit and trust accounts and annuity, insurance and pension accounts which the government holds or administers, including the old age security fund and the Canada Pension Plan fund which are operated as separate entities. These disbursements are excluded from the calculation of the annual budgetary surplus or deficit.

The budget. The Minister of Finance usually presents his annual budget speech in the House of Commons some time after the Main Estimates have been introduced. The budget speech reviews the state of the national economy and the financial operations of the government for the previous fiscal year and gives a forecast of the probable financial requirements for the year ahead, taking into account the Main Estimates and making allowances for Supplementary Estimates. At the close of his address, the Minister tables the formal notices of ways and means motions for any changes in the existing tax rates or rules and customs tariff which, in accordance with parliamentary procedure, must precede the introduction of any money bills. These resolutions give notice of the amendments which the government intends to ask Parliament to make in the taxation statutes. However if a change is proposed in a commodity tax, such as a sales tax or excise duty on a particular item, it is usually made effective immediately; the legislation, when passed, is made retroactive to the date of the speech.

The budget speech is delivered in support of a motion that the House go into committee; debate on this motion may take up six sitting days, but once it is passed the way is clear for consideration of the budget resolutions. When these have been approved by the committee, a report to this effect is made to the House, and the tax bills are introduced and dealt with in the same manner as all other government financial legislation.

Revenues and expenditures. Administrative procedures governing revenues and expenditures are, for the most part, contained in the Financial Administration Act.

With respect to revenues, the basic requirement is that all public money shall be paid into the Consolidated Revenue Fund, which is defined as the aggregate of all public money on deposit to the credit of the Receiver General. The Minister of Supply and Services is the Receiver General for Canada. Treasury Board has prescribed detailed regulations governing the receipt and deposit of such money. The Bank of Canada and the chartered banks are the custodians of public money. Balances are apportioned among the various chartered banks according to a percentage allocation established by agreement among all the banks and communicated to the Department of Finance by the Canadian Bankers' Association. The daily operating account is maintained with the Bank of Canada and the division of funds between it and the chartered banks takes into account the immediate cash requirements of the

government and consideration of monetary policy. The Minister of Finance may purchase and hold securities of, or guaranteed by, Canada and pay for them out of the Consolidated Revenue Fund or may sell such securities and pay the proceeds into the Fund. Thus, if cash balances in the Fund exceed immediate requirements they may be invested in interest-earning assets. In addition, the Minister of Finance has established a purchase fund to assist in the orderly retirement of the public debt.

Treasury Board exercises central control over the budgets of departments and over financial administrative matters generally. Although the most important part of this control function is exercised during the annual consideration of departmental long-range plans and of the estimates, the Board has the right to maintain continuous control over certain types of expenditure to ensure that activities and commitments for the future are held within approved policies, that departments follow uniform, efficient and economical practices, and that the government is informed of and approves any major development of policy or significant transaction that might give rise to public or parliamentary criticism.

To ensure enforcement of the decisions of Parliament, the government and Ministers regarding expenditures, the Financial Administration Act provides that no payment shall be made out of the Consolidated Revenue Fund without the authority of Parliament and no charge shall be made against an appropriation except on the requisition of the appropriate Minister or a person authorized by him in writing. These requisitions, which must meet certain standards prescribed by Treasury Board regulation, are presented to the Receiver General, who makes the payment.

At the beginning of each fiscal year, or whenever Treasury Board may direct, each department, unless otherwise directed by the Board, submits a division into allotments of each vote included in its estimates. Once approved these allotments cannot be varied or amended without the consent of the Board; expenditures charged to appropriations are limited to such allotments. To avoid over-expenditures within a fiscal year, commitments due to be paid within the year for which Parliament has provided or has been asked to provide appropriations are recorded and controlled by the departments concerned. Commitments made under contract that will fall due in succeeding years are recorded since the government must be prepared in the future to ask Parliament for appropriations to cover them. Any unexpended amounts in the annual appropriations lapse at the end of the year for which they are granted, but for 30 days subsequent to March 31 payments may be made and charged to the previous year's appropriations for work performed, goods received or services rendered prior to the end of that fiscal year.

Under the Financial Administration Act, every payment against an appropriation is made by the Receiver General by cheque or other instrument. After presentation for payment, the cheques or instruments are cleared daily by the chartered banks through the Bank of Canada to the Cheque Redemption Control Division of the Receiver General; the banks are then reimbursed through a cheque drawn on the Receiver General's account with the Bank of Canada.

Public debt. In addition to collecting and disbursing public money for budgetary and non-budgetary purposes, the government receives and pays out substantial sums in connection with its public debt operations. The Minister of Finance is authorized to borrow money by the issue and sale of securities at whatever rate of interest and under whatever terms and conditions the Governor in Council approves. Although new borrowings require specific authority of Parliament, the Financial Administration Act authorizes the Governor in Council to approve borrowings as required to redeem maturing or called securities. To ensure that the Consolidated Revenue Fund will be sufficient to meet lawfully authorized disbursements, he may also approve the temporary borrowing of such sums as are necessary for periods not exceeding six months. The Bank of Canada acts as the fiscal agent of the government in the management of the public debt.

Accounts and financial statements. Under the Financial Administration Act, Treasury Board may prescribe the manner and form in which the accounts of Canada and the accounts of individual departments shall be kept. Annually, on or before December 31 or, if Parliament is not then sitting, within any of the first 15 days after Parliament resumes, the *Public accounts*, prepared by the Receiver General, is laid before the House of Commons by the Minister of Finance. The *Public accounts* contains a survey of the financial transactions of the fiscal year

ended the previous March 31 and statements of revenues and expenditures and of assets and direct and contingent liabilities, together with other accounts and information required to show the financial transactions and financial position of Canada or which are required by law to be reported in the *Public accounts*. The statement of assets and liabilities included in the *Public accounts* is designed to disclose the amount of the net debt, which is determined by offsetting against the gross liabilities only those assets regarded as readily realizable or interest- or revenue-producing. Fixed capital assets, such as government buildings and public works, are charged to budgetary expenditures at the time of acquisition or construction and are shown on the statement of assets and liabilities at a nominal value of \$1. Monthly financial statements are also published in the *Canada Gazette*.

The Auditor General. The government's accounts are subject to an independent examination by the Auditor General who is an officer of Parliament. With respect to expenditures, this examination is a post-audit to report whether the accounts have been properly kept, the money spent for the purposes for which it was appropriated by Parliament and expenditures made as authorized; any audit before payment is the responsibility of the requisitioning department or agency. With respect to revenues, the Auditor General must ascertain that all public money is fully accounted for and that the rules and procedures applied ensure an effective check on the assessment, collection and proper allocation of the revenue. With respect to public property, he must satisfy himself that essential records are maintained and that the rules and procedures applied are sufficient to safeguard and control it. The Auditor General reports the results of his examination to Parliament, calling attention to any case which he considers should be brought to the notice of the House. He also reports to Ministers, the Treasury Board or the government any matter which in his opinion calls for attention so that remedial action may be taken promptly. It is the usual practice to refer the *Public accounts* and the *Auditor General's report* to the House of Commons Standing Committee on Public Accounts, which may review them and report the findings and recommendations to the House of Commons.

3.2.2 Government employment

Treasury Board (a statutory committee of Cabinet) has over-all responsibility for personnel management in the federal Public Service. In this role it is responsible for development and application of personnel policies, systems and methods to ensure that the human resources needed to carry out programs effectively are obtained at competitive prices and used efficiently with due regard for the individual and collective rights of employees.

The Public Service Commission (an independent agency responsible directly to Parliament) ensures that staffing requirements of departments and agencies are met in accordance with the merit principle, operates staff development and training programs, including language training, and establishes appeal boards as provided for in the Public Service Employment Act.

Treasury Board. Under provisions of the amended Financial Administration Act and the Public Service Staff Relations Act, both proclaimed on March 13, 1967, Treasury Board is responsible for the development of policy guidelines, regulations, standards and programs in the areas of classification and pay, conditions of employment, collective bargaining and staff relations, official languages, manpower training, development and utilization, pensions, insurance and other employee benefits and allowances, and other personnel management matters affecting the Public Service.

It is concerned with the development, implementation, maintenance and evaluation of policy guidelines, programs and procedures for the accurate determination, allocation, development and efficient utilization of employees needed in the Public Service to carry out programs effectively. The aim of these measures is to improve the effective use of manpower resources in the Public Service and to this end Treasury Board makes recommendations on organization development, manpower planning, the determination and evaluation of training needs and educational programs, and advises departments and agencies on the design and implementation of systems to improve manpower management.

Treasury Board also develops policy guidelines, programs and regulations on salary administration, benefits and allowances for the Public Service. These functions involve the development and maintenance of classification programs and the associated salary structures. Through delegation, responsibility for classification and the administration of salaries is being transferred progressively to departments, subject to a monitoring process. Benefit programs and allowance policies approved by the Board are designed to give maximum responsibility for administration to departments.

Under the system of collective bargaining established by the Public Service Staff Relations Act, Treasury Board is the employer for all employees in the Public Service, except for certain separate employers such as the National Research Council and the National Film Board. The Board negotiates collective agreements with the unions representing 80 bargaining units and advises departments on their administration. Consultations are held with representatives of bargaining agents, directly or through the National Joint Council, on matters which are not subject to bargaining or which have wide application in the Public Service. The Board determines terms and conditions of employment of employees excluded from collective bargaining, and develops policy guidelines and standards to govern physical working conditions and occupational health and safety. It prepares and presents the employer's position on grievances referred to adjudication, and advises or assists departmental management at preceding stages in the grievance process. The Board presents the position of the employer in applications for certification by employee organizations and in hearings before the Public Service Staff Relations Board on applications for the exclusion of employees from bargaining units.

The Board develops policy guidelines, co-ordinates the administration and recommends periodic revision of pension, insurance and related programs for the Public Service and negotiates reciprocal pension transfer agreements with other public and private employers. It also studies and proposes means of ensuring compatibility between Public Service employee benefits and social security programs such as medicare and the Canada and Quebec Pension Plans.

Public Service Commission. The Public Service Employment Act, which became effective on March 13, 1967, continues the status of the Public Service Commission as an independent agency responsible to Parliament. The Commission has the exclusive right and authority to make appointments to and from within the Public Service. The Commission is also empowered to operate staff development and training programs, to assist Deputy Heads in carrying out training and development and in 1972 was charged with investigations into cases of alleged discrimination on grounds of sex, race, national origin, colour or religion in the application and operation of the Public Service Employment Act.

It may establish boards to render decisions on appeals against appointments made from within the Public Service and against release or demotion for incompetence or incapacity, to make recommendations on the revocation of appointments improperly made under delegated authority and to render decisions on allegations of political partisanship.

The Commission grants or withholds approval of applications for leave of absence from public servants who wish to be candidates in federal, provincial or territorial elections and conducts investigations into allegations of improper political activities on the part of public servants.

The Act authorizes the Commission to delegate to Deputy Heads any of its powers, except those relating to appeals and inquiries. The Commission has delegated its powers to make appointments in the Operational and Administrative Support Categories; employing departments are required to use the Canada Manpower Centres as their recruitment agency for appointments from outside the Public Service. Delegations of appointing authority in the Administrative and Foreign Service, Technical, and Scientific and Professional categories have been made on a restricted basis. The Commission operates a monitoring program designed to ensure that appointments made under delegated authority comply with the law and with Commission policies.

The Public Service Commission performs its important role as guardian of the merit principle to ensure that high standards of quality are maintained within the Service, consistent with adequate representation of the two official language groups, a bilingual capability to the extent prescribed by the government, equal employment and career development oppor-

tunities irrespective of sex, race, national origin, colour or religion, and encouragement of opportunities for disadvantaged people.

Every citizen may apply for positions. Competitive examinations are announced through the news media and posters displayed on public notice boards of major post offices, Canada Manpower Centres, Public Service Commission offices and elsewhere.

The Commission's major task — staffing the Public Service according to merit — is done on an occupational basis. The classification system divides the Service into six broad occupational categories which are further divided into groups of occupationally similar jobs. For each major occupational category or group of occupations there is a program of recruitment, selection and placement. Comprehensive manpower planning, developed in co-operation with Treasury Board and employing departments, has been introduced for several occupational groups. Continuous recruitment techniques, utilizing candidate inventories, have been developed and are used when appropriate. Appointments are made from within the Service except where the Commission believes it is in the best interests of the Service to do otherwise. Appointments from within the Service are made either through a formal competition or from an employee inventory. "Data STREAM", the Commission's computerized manpower inventory, is the primary employee inventory for the Executive, Scientific and Professional, Technical and the Administrative and Foreign Service categories. Under the Public Service Employment Act, public servants who are candidates in a competition open to all or part of the Service may appeal the selections made as a result of the competition to the Public Service Commission.

When a promotion is made without competition, those who would have been eligible to apply if a competition had been held may appeal. Public servants may also appeal the decision of a Deputy Head to recommend release or demotion because of incompetence or incapacity.

Consistent with the growing emphasis on managerial development and continuing education, the Public Service Commission offers interdepartmental courses in government administration, occupational training and management improvement. The Commission acts as the consultant and adviser to Deputy Heads on training matters and the training and development facilities of the Commission are available to employees to train them for specific occupations or for promotion within the administrative and managerial ranks.

In order that departments may perform their functions effectively and serve the public in accordance with the Official Languages Act, the Commission ensures that employees appointed are qualified to meet the linguistic requirements of positions and, in situations where they do not qualify, that incumbents or winners of competitions for bilingual positions receive continuous training in their second official language for up to 52 weeks. Part-time language training is also available to other public servants.

The Commission exercises specific responsibilities in the areas of language training, research and the development of selection standards with regard to the linguistic requirements of positions and groups of positions within the federal Public Service. It must establish the method of assessing language knowledge and it must also establish the degree of language knowledge or proficiency possessed by candidates for positions.

The formulation of appropriate selection standards is to be determined in accordance with the decisions of the individual Deputy Heads with respect to the linguistic requirements of positions and groups of positions.

3.2.3 Immigration

There are three principal objectives of Canada's immigration policy: to stimulate economic growth and encourage social and cultural development (immigrants with the skills required by the Canadian economy are recruited and the temporary entry of non-immigrants whose presence serves these same ends is also arranged); to encourage family reunion; and to alleviate the plight of refugees through humanitarian programs. Immigration law, regulations and practice are designed to protect Canadian national security, public health and economic and social welfare by excluding those people from other countries whose presence in Canada would endanger these interests.

The Immigration Regulations describe the criteria potential immigrants must meet to qualify for admission. Since 1967 Canada's immigration policies have been based on non-discrimination and universality; people from all parts of the world have an equal opportunity to

qualify for admission to Canada. Considered are such things as the applicant's occupational skills, training, ability and personal initiative. Details of these regulations and the immigrant selection criteria may be found in previous editions of the *Canada Year Book*. Several recent changes in the regulations are discussed below.

A provision allowing visitors to apply for landed immigrant status while temporarily in this country came into being with other regulatory changes in October 1967. It was introduced to avoid penalizing persons who had come here as visitors and subsequently decided they wished to stay. The right was withdrawn in light of evidence that it was being abused, and since November 5, 1972 persons seeking permanent residence in Canada have been required to apply at an immigration office outside Canada.

On January 1, 1973 the Minister of Manpower and Immigration introduced regulations designed to control the employment and long-term visits by non-immigrants.

The regulations require that persons other than Canadian citizens or landed immigrants wishing to work in Canada must obtain an employment visa. Such a visa is normally issued when a Canada Manpower Centre certifies that no qualified Canadian resident is available or willing to take such employment. Non-immigrants wishing to remain in Canada longer than 30 days must register with an immigration office. Any violation of the regulations constitutes an offence under the Immigration Act and can be punished by a fine and/or imprisonment or expulsion from Canada.

On August 15, 1973 legislation was enacted to allow persons in Canada to regularize their immigration status, to reduce the backlog of cases before the Immigration Appeal Board and to modify the appeals system for the future. The legislation provided a final opportunity for those who did not have landed immigrant status, and who were in Canada as of November 30, 1972 and had remained here since that time, to apply for landed immigrant status. Individuals had until the following October 15th to register and unsuccessful applicants retained their full rights of appeal to the Immigration Appeal Board. Those who did not register forfeited their opportunity to apply from within Canada for permanent residence and lost certain rights to appeal. By the deadline 49,900 persons had registered under the program. The legislation also contained amendments to the Immigration Appeal Board Act to prevent a backlog of appeals in the future, and temporary amendments to clear an existing backlog of appeals.

In February 1974, the Immigration Regulations were amended to relate the entry of nominated and independent immigrants more closely to the needs of Canada's labour force. These immigrants must be in an occupation for which there exists some demand in Canada, either nationally or a special local demand in an area to which the applicant is destined, or the applicant must have a firm job offer from a Canadian employer. Sponsored dependents (spouses, minor children, aged parents) are not affected. The amended Regulations also make it easier for families with adopted children or half-sisters/brothers to come to Canada.

Further changes in the Immigration Regulations were implemented in October 1974. The changes, which do not affect sponsored dependents, are part of the continuing process initiated in February 1974 to improve the chances that new immigrants will be able to find immediate employment after arrival. Those applicants who have satisfactory evidence of bona fide pre-arranged employment that cannot be filled by a Canadian resident, or are going to an area in Canada where their skills are designated to be in persistent shortage, will have a much better chance of being accepted as immigrants. The revised regulations will help to reduce unemployment of both Canadians and new immigrants, while ensuring that immigrants will more quickly be able to contribute to the economy and become self-reliant.

Special efforts were made in 1973 when a sudden change of government in Chile caused many Chileans to seek to leave their country. An immigration office was opened in Santiago, Chile to handle applications from refugees and Chileans affected by the overthrow of the Allende government. By December 1974 a total of 1,410 persons had arrived in Canada under the program. Canada's immigration presence is being maintained in Chile to process normal applications and any that might yet be received from people affected by the coup d'état.

In September 1973 the Minister announced the government's intention to create a new long-term basis for Canada's immigration and population policy. The goal is to create new immigration legislation that will serve the needs of the Canada of the future as well as those of the present and to define well-founded objectives about how fast the population should grow, how it should be spread between cities and rural areas and among the various regions, and

what kind of social and cultural environment Canadians want. Throughout 1974 a special task force of experts was involved with the writing of a "Green Paper" designed to outline options open in the field of immigration and the consequences of each. After public discussion of the immigration and demographic issues, new immigration legislation will be introduced in Parliament.

The Canada Immigration Division of the Department of Manpower and Immigration administers the Immigration Act and Regulations. The Division has been reorganized to meet the challenge of developing and putting into effect sound immigration policies and programs that will meet Canada's national economic, social and cultural interests. In national headquarters there are four branches. The Recruitment and Selection Branch is concerned with policies and procedures dealing with the recruitment and selection of immigrants for permanent residence in Canada, the admission of refugees, and the entry of non-immigrants for temporary employment. This Branch deals chiefly with matters which affect immigration activities outside Canada and on the recruitment side works closely with the Manpower Division. The Facilitation, Enforcement and Control Branch is responsible for facilitating the examination of persons at ports of entry and identifying and preventing the entry of, or removing from within Canada, persons whose presence is not in Canada's interest. The Settlement Branch develops policy and programs for the provision of services to immigrants by the Department and through selective funding of community organizations and it is responsible for federal-provincial relations pertaining to immigration. The Priorities and Program Co-ordination Branch is responsible for the co-ordination of policy and resource planning within the Immigration Division and works with other elements of the Department, central agencies and other departments. The field is divided into six regions. The Foreign Service Region is responsible for the operation of overseas activities, uniform application of selection standards, implementation of approved programs abroad, the counselling and direction of immigrants, and the recruitment of foreign workers. The five Canadian regions (Pacific, Prairie, Ontario, Quebec, Atlantic) are responsible for the operation of immigration activities, the consistent application of policy and the implementation of approved programs within Canada. These responsibilities are carried out through the Canada Immigration Centres spread across the country.

There are Manpower and Immigration offices outside Canada in Athens, Atlanta, Beirut, Belfast, Belgrade, Berlin, Berne, Birmingham, Bogota, Bonn, Bordeaux, Boston, Brussels, Budapest, Buenos Aires, Buffalo, Cairo, Cologne, Copenhagen, Chicago, Dallas, Detroit, Dublin, Glasgow, The Hague, Hamburg, Helsinki, Hong Kong, Islamabad, Kingston, Lisbon, London, Los Angeles, Madrid, Manchester, Manila, Marseille, Mexico City, Milan, Minneapolis, Nairobi, New Delhi, New Orleans, New York, Oslo, Paris, Port-au-Prince, Port of Spain, Rome, San Francisco, Seoul, Seattle, Singapore, Stockholm, Stuttgart, Sydney, Tel Aviv, Tokyo, Vienna and Warsaw. Many of these offices have been assigned responsibilities in countries not serviced by a resident Canadian immigration officer and visits are made within each designated area as the volume of applications warrants. Personnel are kept in touch with economic conditions in Canada and advise immigrants about their prospects of successful establishment in Canada.

Examination of immigrants and visitors is carried out at more than 500 ports of entry on Canadian coasts, at points along the international boundary and at certain airports and inland offices.

3.2.4 Citizenship

The Canadian Citizenship Act (RSC 1970, c.C-19), which came into force on January 1, 1947 replacing previous Naturalization Acts, created the distinct nationality of a "Canadian citizen" to be recognized throughout the world and it provided a means whereby those non-Canadian British subjects and aliens who were permanently residing in Canada or those who might subsequently immigrate to Canada could apply for Canadian citizenship. The Act also provides for reacquisition of Canadian citizenship by natural-born Canadians. Administration of Canadian citizenship is under the jurisdiction of the Department of the Secretary of State, Citizenship Registration Branch.

Natural-born Canadian citizens. The Act conferred natural-born status on two categories of persons on January 1, 1947: those born in Canada or on a Canadian ship or aircraft and who

were not aliens on January 1, 1947; and those born of Canadian fathers outside Canada who were not aliens on January 1, 1947 and were either minors on that date or had already entered Canada for permanent residence.

The Act provides that a person born abroad who was a minor on January 1, 1947 automatically ceased to be a Canadian citizen on his 24th birthday or on January 1, 1954, whichever was later, unless he had his place of domicile in Canada at such date or had, before such date and after reaching the age of 21 years, filed a declaration of retention of Canadian citizenship.

A person born outside Canada after December 31, 1946, whose responsible parent is considered a Canadian citizen under the terms of the Canadian Citizenship Act, is a Canadian if his birth is registered with the Registrar of Canadian Citizenship within two years of its occurrence or within such extended period as the Minister may authorize in special cases.

A person who becomes a natural-born Canadian citizen in this manner will automatically cease to be a Canadian citizen if he fails to file a declaration of retention prior to his 24th birthday or does not have his place of domicile in Canada on that date.

Newfoundland and Canadian citizenship. On April 1, 1949 Newfoundland became the 10th province of Canada and every person born therein or naturalized or every British subject who had domicile in Newfoundland on that date or every woman who married a citizen of Newfoundland and took up residence there before April 1, 1949 became a Canadian citizen. They acquired the right of conferring Canadian citizenship by descent on their children born outside Newfoundland in the same manner as those who had previously become Canadians. Persons born outside Newfoundland to Newfoundland parents are natural-born Canadian citizens provided they were either minors on April 1, 1949 or had before that date been lawfully admitted to Canada or Newfoundland for permanent residence. However, a person who was a minor on April 1, 1949 ceased to be a Canadian on his 24th birthday or on July 1, 1968, whichever was later, unless he had his place of domicile in Canada at that date or had filed a declaration of retention of Canadian citizenship after reaching the age of 21 years. A person born outside Canada to Newfoundland parents after March 31, 1949 is a natural-born Canadian if his birth is registered with the Registrar of Canadian Citizenship within two years of its occurrence or within such extended period as the Minister may authorize in special cases. A person who becomes a natural-born Canadian in this manner will automatically cease to be a Canadian citizen if he fails to file a declaration of retention prior to his 24th birthday or does not have his place of domicile in Canada on that date.

Canadian citizens other than natural-born. Before the 1953 amendments to the Citizenship Act, the only persons who acquired Canadian citizenship on January 1, 1947 through the transitional clauses of Section 9 were persons naturalized in Canada before that date, British subjects who had Canadian domicile at the commencement of the Act and women lawfully admitted to Canada and married prior to January 1, 1947 whose husbands would have qualified as Canadian citizens if the Act had come into force before the date of marriage. Section 9 was amended on June 1, 1953 so that a British subject domiciled in Canada for at least 20 years immediately before January 1, 1947 need not comply with the requirements of Canadian domicile provided he was not under an order of deportation on January 1, 1947.

Acquisition of Canadian citizenship by aliens or British subjects. An adult non-Canadian British subject or an alien who wishes to become a Canadian must formally file an application for citizenship. The non-Canadian British subject may file an application direct with the Registrar of Canadian Citizenship, whereas an alien must file an application through his local court, or through one of the special citizenship courts now established or, if he lives more than 50 miles from a court, he may mail his application to the Registrar of Canadian Citizenship in Ottawa, who will file it with the appropriate court.

After the application has been posted for three months, he is called to appear before the court for examination. In either case the same requirements apply: (1) He must have resided in Canada for 12 of the 18 months immediately preceding the date of his application. (2) He must have been lawfully admitted to Canada for permanent residence and either have acquired Canadian domicile before July 7, 1967, or have resided in Canada for five of the eight years immediately preceding the filing of his application. (Persons living in Canada before obtaining landed-immigrant status may count half of each full year before landing toward the

residence qualification. The wife of a Canadian needs only to be admitted for permanent residence and reside in Canada for one year.) (3) He must be of good character and not under an order of deportation. (4) He must have an adequate knowledge of either English or French or, alternatively, be the spouse, widow or widower of a Canadian or, either be 40 or more years of age at the time of lawful admission and have resided in Canada for more than 10 years or be less than 40 at the time of admission and have resided continuously in Canada for more than 20 years. (5) He must have an adequate knowledge of the responsibilities and privileges of citizenship. (6) He must intend to comply with the Oath of Allegiance and to have his place of domicile permanently in Canada.

At the conclusion of the hearing, the decision of the court is forwarded to the Minister responsible for administering the Canadian Citizenship Act. If favourable, a certificate of Canadian citizenship granted by the Minister is forwarded to the clerk of the court who notifies the applicant when to appear before the court to take the Oath of Allegiance and receive his certificate. Where a court finds that an applicant does not possess the required qualifications, the Minister will advise the applicant and give him notice that he may appeal the decision within 30 days to the Citizenship Appeal Court which is the Trial Division of the Federal Court of Canada. If a court rejects an application and this decision is upheld by the Citizenship Appeal Court or if an application is refused by the Minister, the applicant has the right to file a new application two years after the date of rejection.

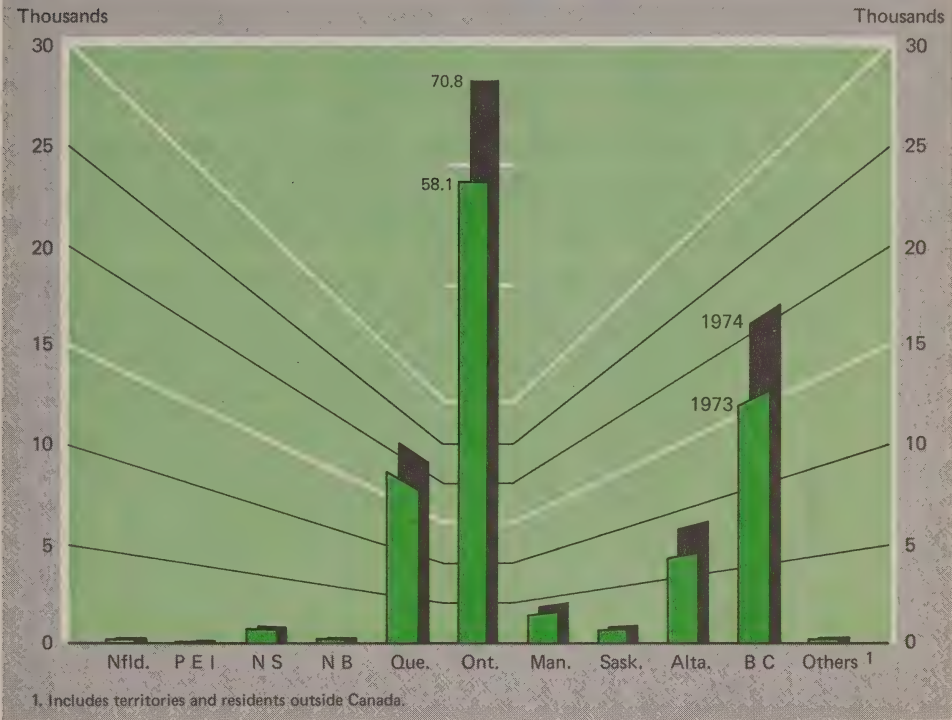
Status of married women. The Canadian Citizenship Act places no disabilities on the married woman. She neither acquires nor does she lose Canadian citizenship by marriage. In order to acquire Canadian citizenship she must apply in exactly the same manner as does a man. The Canadian Citizenship Act enables a woman married to an alien whose nationality she acquired on marriage to divest herself of Canadian citizenship by the filing of a declaration of renunciation; it also provides for her to reacquire her Canadian citizenship on application. Finally, it provides a means whereby a woman, who had become an alien through marriage prior to January 1, 1947, may acquire the Canadian status she would otherwise have assumed on that date.

Status of minor children. Alien and British subject minor children do not automatically become Canadians with their parents. After one parent has become a Canadian, the responsible parent of that child — his mother if she has de facto custody of the child or maintains him — the tutor or the legal guardian of the child may apply for citizenship on the child's behalf. Application is made to the Registrar of Canadian Citizenship, Ottawa. Provision is also made in the Citizenship Act to grant a certificate of citizenship to a minor child in special circumstances.

Loss of Canadian citizenship. Certain circumstances result in loss of citizenship. A Canadian loses his citizenship if when outside Canada and not under disability he acquires by a voluntary and formal act other than marriage the nationality or citizenship of a country other than Canada. This does not apply if the country is at war with Canada at the time of acquisition but in such a case the Minister may order that he cease to be a Canadian citizen. The purpose of this is to hold the person, if deemed necessary, to his obligations as a Canadian. A natural-born Canadian citizen who is a dual national by birth or through naturalization, and any Canadian citizen on marriage, may after attaining the age of 21 cease to be a Canadian citizen by making a declaration of renunciation thereof. A Canadian citizen who under the law of another country is a national or citizen of such country and who serves in the armed forces of such country when it is at war with Canada loses his Canadian citizenship. This does not apply if the Canadian citizen became a national or citizen of such country when it was at war with Canada.

Prior to the 1967 amendments of the Citizenship Act, a person, other than a natural-born Canadian, who since becoming a Canadian had resided outside Canada for 10 consecutive years automatically ceased to be a Canadian; this provision for automatic loss has been removed from the Citizenship Act. In addition, before the 1967 amendments loss of Canadian citizenship by revocation was limited under certain provisions of the Act only to non-natural-born Canadians. This discriminatory distinction between non-natural-born and natural-born Canadians has been removed from the Citizenship Act and the following substituted: Canadian citizenship may be revoked by the Governor in Council if, on a report from the Minister, he is satisfied that any Canadian citizen has, when not under a disability, acquired

Citizenship certificates granted by place of residence, 1973 and 1974



voluntarily, when in Canada, the citizenship of a foreign country (other than by marriage); taken or made an oath, affirmation or other declaration of allegiance to a foreign country; made a declaration renouncing his Canadian citizenship; or obtained Canadian citizenship by false representation or fraud or by concealment of material circumstances. Where in the opinion of the Minister a doubt exists as to whether a person has ceased to be a Canadian citizen, the Minister may refer the question to the commission referred to in the Citizenship Act for a ruling and the decision of the commission or the court, as the case may be, shall be final.

Citizenship statistics. Citizenship certificates are “issued” for various reasons to persons who are already Canadian citizens; certificates are “granted” to those who become Canadian citizens by the grant of such certificates. In 1974, 137,272 certificates were issued and 130,278 granted. Of the latter 53,284 went to British subjects and 76,994 to aliens.

3.2.5 Native peoples

3.2.5.1 Indians

The federal Department of Indian Affairs and Northern Development is responsible for meeting statutory obligations toward the Indian people registered under the Indian Act and for programs approved specifically for them.

The Department’s Community Affairs Branch assists with the physical development of Indian communities, which involves planning, housing, water, sanitation, electricity and the construction and maintenance of roads on reserves. Indian participation in these activities as well as in services such as school maintenance, fire and police protection and local government is increasing as the concept of band management is extended. In 1974-75, \$45 million was

provided for capital investments in community improvements, and \$7.4 million for operating expenditures. Further to proposals of the National Indian Brotherhood, the Department is now preparing recommendations for a housing policy.

The role of the federal government in the administration of programs for Indian people is changing from that of direct program management at the local level, to that of acting in an advisory and consultative capacity as the Indian people assume responsibility for managing their own affairs under the Department's Local Government Program. Emphasis is placed on the definition of needs and priorities by both the Department and Indian bands working jointly, and on the development of close consultation for deciding both policy and administrative matters.

Under agreements with the federal government, provincial Indian associations receive funds to administer community development programs that are planned jointly with government officials, but administered by the associations themselves. These programs are intended to help Indian people to improve the social, economic and cultural conditions of life in their communities.

Since the first such agreement was concluded with the Manitoba Indian Brotherhood in 1969, others have been entered into with Indian associations in Nova Scotia, New Brunswick, Ontario, Saskatchewan, British Columbia, the Yukon Territory and the Northwest Territories. In 1973-74 these associations handled over \$2 million in community development funds.

The Department, through its Indian-Eskimo Economic Development Branch, works to raise the economic status and increase the independence of individuals and bands by assisting in the creation of business and employment opportunities in service and secondary industries and in areas of resource utilization and land development, including the development of mineral resources on Indian reserves. Many of these programs are conducted in co-operation with other federal government departments, provincial governments and private organizations. Assistance is in the form of loans, grants and contributions, loan guarantees, technical and management advice, and specialized training. The loans are provided from the Indian Economic Development Fund, capitalized at \$60 million for the five years ended March 31, 1975. During 1974 a new guaranteed loan fund of \$30 million was established. In addition the Branch has appropriated a total of \$23.7 million during the past five years in grants and contributions to be used to encourage economic activity through the provision of basic infrastructure and professional and technical services. For the fiscal year 1974-75 to January 31, 1975, the fund provided \$30.4 million in loans, guarantees, grants and contributions. The Branch also administers the Indian reserves and surrendered lands as well as certain categories of Indian estates.

Indians are eligible for benefits from a number of welfare programs which are administered by different levels of government, Indian bands and private agencies. Like other Canadians, not all Indians have the same programs available to them, as some programs vary not only between but also within provinces and on and off reserves.

Some Indian bands administer social assistance and child care for persons living on the reserve of the band. The criteria of eligibility and rates of payment for social assistance are based on those of the province in which the band is located. Family allowances, old age security and the guaranteed income supplement are paid to Indians by the Department of National Health and Welfare on the same basis as they are paid to other Canadians.

Indians are eligible for benefits from some, but not all, provincial welfare programs except in the Northwest Territories, where they are eligible for benefits from all territorial welfare programs. Generally speaking, Indians are eligible for benefits under provincial programs for specific categories or persons, such as the blind. Generally, benefits from less specific programs, such as social assistance, are not available to Indians living on reserves, but they are available in some parts of some provinces.

The federal Department of Indian Affairs and Northern Development provides social assistance, care for children and care for physically handicapped adults when these are not available from other sources. The criteria for eligibility and the rates used in calculating the amount to which an applicant for social assistance is entitled are based on those of the province in which the person applies for assistance. Also, that Department and the Department of National Health and Welfare have an expanded program to deal with problems of alcohol abuse among native people. The native people themselves will be invited to formulate and

implement projects for the prevention of alcohol abuse, and treatment and rehabilitation of alcoholics.

Since 1969 the government has provided financial assistance to Indian and Inuit people to conduct the necessary research to support their claims to traditional interests in lands, and their rights under treaty or the Indian Act. The government has recognized that its lawful obligations to Indian people must be met, and has agreed to undertake negotiations with Indian and Inuit people. Claims may be based on traditional use and occupancy of land in areas where the Indian interest has not been extinguished by treaty or superseded by law, or they may be based on interpretation of treaties and legislation, or the administration of assets.

In 1974 the Department established the Office of Claims Negotiation to act for the government in respect to Indian and Inuit claims. The Office acts as the government's representative in negotiating claims settlements.

Progress has been made in negotiating settlements of claims based on traditional use and occupancy of land in northern Quebec and the Yukon Territory, and initial discussions with Indian representatives have begun on claims of this type in British Columbia. Similarly, a number of claims involving administrative transactions in the past have been the subject of negotiation. As a result, some claims have been settled, and others are expected to be.

At the end of 1974, 49 claims relating to land or various aspects of Indian Affairs' administration over the years had been submitted by Indian bands and organizations across the country and notice of a further 57 claims was given by native groups. Of the 49 claims submitted before the end of 1974, 17 were under analysis or review, 13 were being negotiated, 16 were found to have no basis for negotiation and three were settled.

A Branch is responsible for conducting policy planning and research projects of general importance to the Indian and Eskimo Affairs Program, and for the co-ordination of similar projects carried out in other branches. A small group within the Branch is responsible for legislative planning, for formulating broad socio-economic policies, and for consulting on major policy issues with the political organizations that represent Canadian Indians. The Research Division carries out a small research program directly related to major policy issues and contracts with other agencies to carry out related work. It provides research services to the Indian and Eskimo Affairs Program and to other agencies conducting studies on Indian rights and treaties. This Division also administers a program to finance rights and treaty research by Indian associations and will have provided \$7.5 million in contributions over a four-year period ending in 1976.

3.2.5.2 Inuit

Canada's 18,000 Inuit or Eskimo people, most of whom live in the Northwest Territories, Arctic Quebec and northern Labrador, are the concern of the federal Department of Indian Affairs and Northern Development, the government of the Northwest Territories and provincial governments.

Housing for Inuit people is provided under the Northern Rental Housing Program. Since the program began in 1966, 1,505 three-bedroom houses have been built; 81 of these were constructed in 1974-75.

Counselling units are maintained in Ottawa and Winnipeg for Inuit students attending various high school, technical school, college and university programs in southern Canada. A program was instituted this year to enable parents to come south to visit their children.

A limited relocation project for Inuit who wish full-time wage employment is available at Lynn Lake, Man. Inuit from the Keewatin District are able to secure employment with the mine at Lynn Lake and the Department has rental housing available for them. The Department of National Defence offers employment at its station at Alert to civilian Inuit. A Student Centre for Inuit was established in Ottawa during 1974 and an Inuit Orientation Centre is planned for 1975. Inuit are involved in a Departmental On-the-Job Training program to place them in middle management positions related to resource development and the environment. A special unit has been established in the North by the Public Service Commission to improve employment and career possibilities for northern native people.

The Inuit Tapirisat of Canada (Eskimo Brotherhood) was founded in 1971 with financial assistance from the Department of the Secretary of State. Affiliated with Inuit Tapirisat are the Committee of Original Peoples Entitlement (COPE), serving native people in the Mackenzie Delta and the Western Arctic, the Labrador Inuit Association (LIA), serving Inuit residents of

Labrador, and the Northern Quebec Inuit Association (NQIA) for those Inuit living in Nouveau-Québec. Other regional associations in the Northwest Territories are being proposed by Inuit Tapirisat to facilitate local participation in domestic affairs.

Of major significance for the Inuit people is the enormous task which the Tapirisat has undertaken to prepare a presentation on their land claims to the Government of Canada. In consultation with the Department of Indian Affairs and Northern Development, the Tapirisat is conducting research on the legal aspects of these claims. They are also preparing a comprehensive land use and occupancy study based on the traditional and contemporary use of Arctic lands and waters by the Inuit people.

Additional programs include a language commission to study the possibility of standardizing Inuit orthography, and the production of a laymen's information guide to Canadian law entitled *Inuit and the law*. A legal services centre, the Maliganik Tuksiiniakvik Society, has been established at Frobisher Bay, NWT, with the financial help of the Department of Justice and the government of the Northwest Territories, to provide counsel and guidance for Inuit.

An Inuit Cultural Institute sponsored by the Tapirisat and the Department of Indian Affairs and Northern Development was established at Eskimo Point, NWT. It provides a centre for all Inuit to participate in traditional cultural programs as well as contemporary issues affecting their everyday life, such as community development, education, economics and social activities.

As a result of the search for oil, gas and minerals in the Arctic, many Inuit are finding employment in petroleum and related industries. A recent example is the lead-zinc mining venture at Nanisivik, Strathcona Sound in North Baffin Island. A pilot project was initiated in the summer of 1974. By joint agreement between the federal government and industry, this mine affords employment and other opportunities for the Inuit residents of surrounding communities in North Baffin. However, many Inuit still live by their traditional skills of hunting, trapping and fishing. One of the most successful enterprises is the production and sale of Inuit artwork — stone, bone and ivory sculpture and graphics. The industry is expanding and co-operatives are run by the Inuit.

Communications, long a problem in the Arctic, have recently entered a new era with the introduction of Anik, a communications satellite through which telephone, radio and television transmissions are beamed to a number of northern communities. The motorized toboggan has replaced the traditional dog sled, and for longer journeys the airplane is used. Few communities are without airstrips. STOL (short take-off and landing) and jet aircraft have also made the North more accessible.

3.2.6 Departments, boards, commissions and corporations

In Canada the work of government is conducted by federal departments, special boards, commissions and Crown corporations. During the past quarter-century this last type of organization, the Crown corporation, has been used frequently for administering and managing many public services in which business enterprise and public accountability must be combined. The historical evolution of Crown corporations is described in the *1972 Canada Year Book* p 153. Part VIII of the Financial Administration Act (RSC 1970, c.F-10) provides a uniform system of financial and budgetary control and of accounting, auditing and reporting for Crown corporations. In addition, that legislation defines a Crown corporation as a corporation that is ultimately accountable, through a Minister, to Parliament for the conduct of its affairs and establishes three classes of corporation — departmental, agency and proprietary.

Departmental corporations. A departmental corporation is defined as a Crown corporation that is a servant or agent of Her Majesty in right of Canada and is responsible for administrative, supervisory or regulatory services of a governmental nature. The following corporations are classified as departmental corporations in Schedule B to the Financial Administration Act:

- Agricultural Stabilization Board
- Atomic Energy Control Board
- Director of Soldier Settlement
- The Director, The Veterans' Land Act
- Economic Council of Canada

Fisheries Prices Support Board
 Medical Research Council
 Municipal Development and Loan Board
 National Museums of Canada
 National Research Council
 Science Council of Canada
 Unemployment Insurance Commission.

Agency corporations. An agency corporation is defined as a Crown corporation that is an agent of Her Majesty in right of Canada and is responsible for the management of trading or service operations on a quasi-commercial basis or for the management of procurement, construction or disposal activities on behalf of Her Majesty in right of Canada. The following corporations are classified as agency corporations in Schedule C to the Financial Administration Act:

Atomic Energy of Canada Limited
 Canadian Arsenal Limited
 Canadian Commercial Corporation
 Canadian Dairy Commission
 Canadian Film Development Corporation
 Canadian Livestock Feed Board
 Canadian National (West Indies) Steamships Limited
 Canadian Patents and Development Limited
 Canadian Saltfish Corporation
 Company of Young Canadians
 Crown Assets Disposal Corporation
 Defence Construction (1951) Limited
 National Battlefields Commission
 National Capital Commission
 National Harbours Board
 Northern Canada Power Commission
 Royal Canadian Mint
 Uranium Canada Limited.

Proprietary corporations. A proprietary corporation is defined as a Crown corporation that is responsible for the management of lending or financial operations, or for the management of commercial or industrial operations involving the production of or dealing in goods and the supplying of services to the public, and is ordinarily required to conduct its operations without parliamentary appropriations. The following corporations are classified as proprietary corporations in Schedule D to the Act:

Air Canada
 Canada Deposit Insurance Corporation
 Canadian Broadcasting Corporation
 Cape Breton Development Corporation
 Central Mortgage and Housing Corporation
 Eldorado Aviation Limited
 Eldorado Nuclear Limited
 Export Development Corporation
 Farm Credit Corporation
 Freshwater Fish Marketing Corporation
 National Railways, as defined in the Canadian National–Canadian Pacific Act (RSC 1952, c.39)
 Northern Transportation Company Limited
 Pilotage Authorities
 Atlantic Pilotage Authority
 Great Lakes Pilotage Authority
 Laurentian Pilotage Authority
 Pacific Pilotage Authority
 St. Lawrence Seaway Authority
 Seaway International Bridge Corporation Limited (formerly Cornwall International Bridge Company Limited)
 Teleglobe Canada.

Departmental corporations are governed by the provisions of the Financial Administration Act that are applicable to departments generally. Agency and proprietary corporations, however, are subject to the provisions of the Crown corporations part of the Act, although, if there is any inconsistency between its provisions and those of any other Act applicable to a

corporation, the Act provides that the latter prevail. The same part provides for control and regulation of corporation budgets and bank accounts, turning over surplus money to the Receiver General, loans for limited working-capital purposes, awarding of contracts and establishment of reserves, keeping and auditing of accounts, and the preparation of financial statements and reports and their submission to Parliament through the appropriate Minister.

A further form of control is exercised by Parliament through the power to vote financial assistance to a corporation, which may secure financing through parliamentary grants, loans or advances, by the issue of capital stock to the government, or by borrowings from the private sector of the general public, sometimes with a government guarantee. Several corporations finance all or a portion of their requirements from their own resources or earnings.

Before 1952 Crown corporations did not pay corporate income taxes. However, the Income Tax Act was amended, effective January 1, 1952, to make proprietary Crown corporations subject to the Income Tax Act in the same manner as any privately owned corporation. As a result of this amendment it is now possible to make a more realistic comparison of the financial statements of these Crown companies with those of private industry, and thus assess the relative efficiency of their operations. Crown corporations also pay provincial retail sales taxes, gasoline or motor vehicle fuel taxes and motor vehicle fees subject to the terms of the Crown Corporations (Provincial Taxes and Fees) Act of 1964.

Unclassified corporations. The following Crown corporations are not classified in the Financial Administration Act but are governed by their own Acts of incorporation: the Bank of Canada, the Canada Council, the Canadian National Railways Securities Trust, the Canadian Wheat Board, the Industrial Development Bank and the National Arts Centre Corporation. The only provision of the Financial Administration Act to which they are subject is that governing the appointment of auditors, although the Governor in Council has the power in some instances to add an unclassified corporation to one of the schedules to the Financial Administration Act.

Other corporations. The government has participated in the establishment of some corporations that are not subject to the provisions of the Financial Administration Act and do not report to Parliament. The Canada Development Corporation, Telesat Canada and Panarctic Oils Ltd. are corporations of this type.

An alphabetical list of federal Ministers and the departments and other agencies for which they report to Parliament follows. Brief descriptions of the functions of many of these government organizations and related agencies will be found in Appendix 1. The accompanying organization chart illustrates the federal structure to the departmental level.

Minister of Agriculture

Department of Agriculture
Agricultural Products Board
Agricultural Stabilization Board
Canadian Dairy Commission
Canadian Grain Commission
Canadian Livestock Feed Board
Crop Insurance Administration
Farm Credit Corporation
National Farm Products Marketing Council
Prairie Farm Assistance Administration

Minister of Communications

Department of Communications
Canadian Radio-Television Commission
Canadian Transport Commission
Telelobe Canada

Minister of Consumer and Corporate Affairs

Department of Consumer and Corporate Affairs
Canadian Consumer Council
Copyright Appeal Board
Food Prices Review Board (to be replaced by the Anti-Inflation Board)
Restrictive Trade Practices Commission

Minister of Energy, Mines and Resources

Department of Energy, Mines and Resources
Atomic Energy of Canada Limited
Atomic Energy Control Board
Board of Examiners for Dominion Land Surveyors
Canadian Permanent Committee on Geographical Names
Columbia River Treaty Permanent Engineering Board
Eldorado Aviation Limited
Eldorado Nuclear Limited
Energy Supplies Allocation Board
Interprovincial Boundary Commission
National Energy Board
Uranium Canada Limited

Minister of the Environment

Department of the Environment
Minister of State (Fisheries)
Canadian Saltfish Corporation
Fisheries Prices Support Board
Fisheries Research Board of Canada
Freshwater Fish Marketing Corporation
International Fisheries Commission

Secretary of State for External Affairs

Department of External Affairs
 Canadian International Development Agency
 Foreign Claims Commission
 International Boundary Commission
 International Development Research Centre
 International Joint Commission
 Roosevelt Campobello International Park
 Commission

Minister of Finance

Department of Finance
 Anti-dumping Tribunal
 Bank of Canada
 Canada Deposit Insurance Corporation
 Department of Insurance
 Industrial Development Bank
 Tariff Board

Minister of Indian Affairs and Northern Development

Department of Indian Affairs and Northern
 Development
 Council of the Northwest Territories
 Council of the Yukon Territory
 Historic Sites and Monuments Board of Canada
 National Battlefields Commission
 Northern Canada Power Commission

Minister of Industry, Trade and Commerce

Department of Industry, Trade and Commerce
 Export Development Corporation
 General Adjustment Assistance Board
 Machinery and Equipment Advisory Board
 Metric Commission
 National Design Council
 Standards Council of Canada
 Statistics Canada
 Textile and Clothing Board

Minister of Justice and Attorney General of Canada

Department of Justice
 Law Reform Commission
 Tax Review Board

Minister of Labour

Department of Labour
 Canada Labour Relations Board
 Information Canada
 Merchant Seamen Compensation Board

Minister of Manpower and Immigration

Department of Manpower and Immigration
 Canada Manpower and Immigration Council
 Immigration Appeal Board
 Unemployment Insurance Commission

Minister of National Defence

Department of National Defence
 Canada Emergency Measures Organization
 Defence Construction (1951) Limited
 Defence Research Board

Minister of National Health and Welfare

Department of National Health and Welfare
 Dominion Council of Health

Medical Research Council

National Advisory Council on Fitness and Amateur
 Sport
 National Council of Welfare
 Pension Appeals Board

Minister of National Revenue

Department of National Revenue

Postmaster General

Post Office Department

Minister of Public Works

Department of Public Works
 Dominion Fire Commissioner

Minister of Regional Economic Expansion

Department of Regional Economic Expansion
 Atlantic Development Council
 Canadian Council on Rural Development
 Cape Breton Development Corporation
 New Brunswick Multiplex Corporation
 Prairie Farm Rehabilitation Administration

Minister of State for Science and Technology

Ministry of State for Science and Technology
 Science Council of Canada

Secretary of State of Canada

Department of the Secretary of State
 Bilingual Districts Advisory Board
 Canada Council
 Canadian Broadcasting Corporation
 Canadian Film Development Corporation
 Company of Young Canadians
 National Arts Centre Corporation
 National Film Board
 National Library
 National Museums of Canada
 Public Archives

Solicitor General

Department of the Solicitor General
 Canadian Penitentiary Service
 National Parole Board
 Royal Canadian Mounted Police

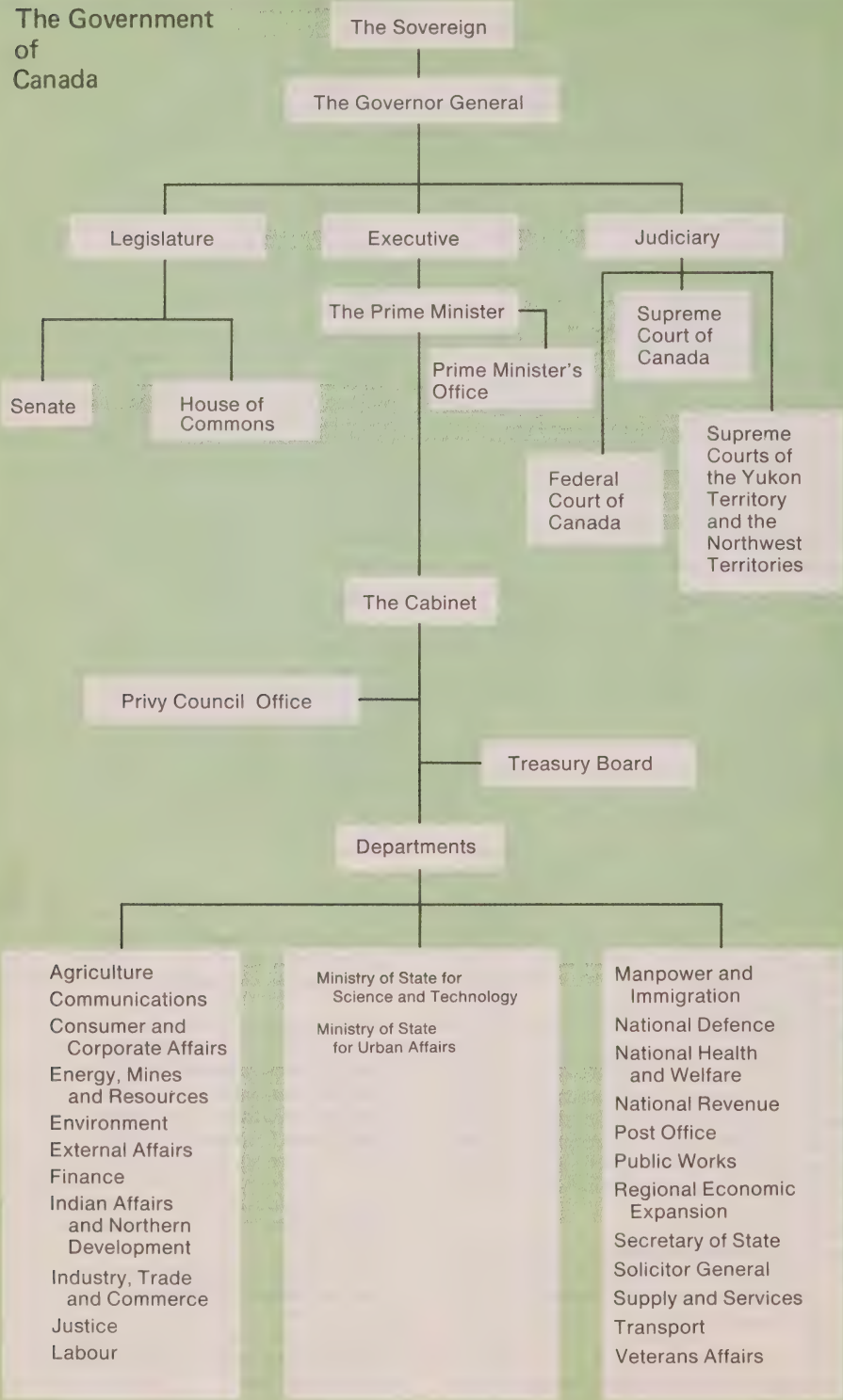
Minister of Supply and Services

Department of Supply and Services
 Canadian Arsenals Limited
 Canadian Commercial Corporation
 Canadian Government Specifications Board
 Crown Assets Disposal Corporation
 Royal Canadian Mint

Minister of Transport

Ministry of Transport
 Air Canada
 Canadian National Railways
 Canadian Transport Commission
 Canadian Wheat Board
 National Harbours Board
 Northern Transportation Company Limited
 Pilotage Authorities
 Atlantic Pilotage Authority

The Government of Canada



Great Lakes Pilotage Authority
 Laurentian Pilotage Authority
 Pacific Pilotage Authority
 St. Lawrence Seaway Authority
 Seaway International Bridge Corporation Limited

President of Treasury Board
 Canadian Patents and Development Limited
 National Research Council

Minister of State for Urban Affairs
 Ministry of State for Urban Affairs

Central Mortgage and Housing Corporation
 National Capital Commission

Minister of Veterans Affairs
 Department of Veterans Affairs
 Army Benevolent Fund Board
 Bureau of Pensions Advocates
 Canadian Pension Commission
 Commonwealth War Graves Commission
 (Canada)
 Pension Review Board
 War Veterans Allowance Board

3.3 Provincial and territorial governments

3.3.1 Provincial governments

In each of the provinces, the Queen is represented by a Lieutenant Governor appointed by the Governor General in Council. The Lieutenant Governor acts on the advice and with the assistance of his Ministry or Executive Council which is responsible to the legislature and resigns office under circumstances similar to those described concerning the federal government.

The legislature of each province is unicameral, consisting of the Lieutenant Governor and a Legislative Assembly. The Legislative Assembly is elected by the people for a statutory term of five years but may be dissolved within that period by the Lieutenant Governor on the advice of the Premier of the province.

Sections 92, 93 and 95 of the British North America Act, 1867 (Br. Stat. 1867, c.3 and amendments) assign legislative authority in certain areas to the provincial governments (see Chapter 2).

Details regarding qualifications and disqualifications of the franchise are contained in the Elections Act of each province. In general, every person at a specified age (18 to 21 years) who is a Canadian citizen or (in certain provinces) other British subject, who complies with certain residence requirements in the province and the electoral district of polling and who falls under no statutory disqualifications, is entitled to vote. Voting privileges are given to persons in Prince Edward Island, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta at the age of 18 and in Newfoundland, Nova Scotia and British Columbia at 19 years.

3.3.1.1 Newfoundland

The government of Newfoundland has a Lieutenant Governor, an Executive Council and a House of Assembly made up of 51 members elected for a term not to exceed five years. Since July 4, 1974 the Lieutenant Governor has been the Honourable Gordon A. Winter. The Legislature, elected September 16, 1975, is the 37th in the history of Newfoundland and the ninth since Confederation. Thirty Progressive Conservatives, 16 Liberals, four members of the Liberal Reform party and one Independent Liberal were elected.

The Premier receives a salary of \$19,000 and Cabinet Ministers \$12,000 per annum, plus a car allowance of \$2,000, sessional indemnity of \$8,000 and a travelling expense allowance of \$4,000. Each member of the House of Assembly receives a sessional indemnity of \$8,000 plus a travelling and expense allowance of \$4,000. The Leader of the Opposition receives an additional allowance of \$12,000.

The Executive Council of Newfoundland as at December 31, 1974

Premier, Hon. F.D. Moores
 President of the Council and Minister of Public
 Works and Services, Hon. Dr. T.C. Farrell
 Minister of Justice, Hon. T. Alex Hickman
 Minister of Finance, Hon. H.R.V. Earle
 Minister of Education, Hon. G. Ottenheimer
 Minister of Transportation and Communications,
 Hon. J.G. Rousseau

Minister of Social Services, Hon. A.J. Murphy
 Minister of Health, Hon. Dr. A.T. Rowe
 Minister of Industrial Development and President
 of Treasury Board, Hon. C.W. Doody
 Minister of Municipal Affairs and Housing, Hon.
 Brian Peckford
 Minister of Manpower and Industrial Relations,
 Hon. E. Maynard

Minister of Provincial Affairs and Environment,
Hon. G. Dawe
Minister of Fisheries, and Minister responsible for
Intergovernmental Affairs, Hon. J.C. Crosbie
Minister of Tourism, Hon. T.V. Hickey
Minister of Mines and Energy, Hon. Leo Barry

Minister of Rural Development, Hon. J. Reid
Minister of Forestry and Agriculture, Hon. Harold
Collins
Minister without portfolio, Hon. William Marshall
Minister of Rehabilitation and Recreation, Hon. T.
Doyle.

3.3.1.2 Prince Edward Island

The government of Prince Edward Island consists of a Lieutenant Governor, an Executive Council and a Legislative Assembly. The present Lieutenant Governor is the Honourable Gordon L. Bennett, appointed effective October 24, 1974. The Legislative Assembly has 32 members from 16 electoral districts who may serve for a statutory term not exceeding five years. Each district elects two representatives to the Legislature. The 53rd Assembly elected April 29, 1974 consisted of 26 Liberals and six Progressive Conservatives; as at December 31, 1974 party standings had changed to 25 Liberals and six Progressive Conservatives with one seat vacant.

A member of the Assembly receives \$7,000 per annum and an additional \$3,500 tax-free for travelling and other expenses incurred in attending sessions and representing his district. In addition the Premier receives a salary of \$24,000, a Cabinet Minister \$14,500 and a Minister without portfolio \$14,500. The Speaker of the Assembly is paid an additional indemnity of \$2,000 and his tax-free allowance is increased by \$1,000; higher sessional indemnities and allowances are also available to the Deputy Speaker in the amounts of \$1,000 and \$500, respectively, and to the Leader of the Opposition in the amount of \$10,000. All indemnities and allowances accrue from the date of election to the legislature and are paid monthly. No sessional indemnity or expenses are paid for any special session of the Legislature.

The Executive Council of Prince Edward Island as at December 31, 1974

Premier, President of the Executive Council,
Minister of Justice and Attorney and Advocate
General, Hon. Alexander B. Campbell
Minister of Finance and Minister responsible for
Cultural Affairs, Hon. T. Earle Hickey
Minister of Development and Minister of Industry
and Commerce, Hon. John H. Maloney
Minister of Public Works and Highways, Hon.
Bruce L. Stewart
Provincial Secretary and Minister of Education,
Hon. Bennett Campbell

Minister of Community Services and Minister of
the Environment and Tourism, Hon. Gilbert
Clements
Minister of Health and Minister of Social Services,
Hon. Catherine Callbeck
Minister of Fisheries and Minister of Labour, Hon.
George Henderson
Minister of Agriculture and Forestry, Hon. A.E.
Ings.

3.3.1.3 Nova Scotia

The government of Nova Scotia consists of a Lieutenant Governor, an Executive Council and a House of Assembly. Since October 1, 1973 the Honourable Clarence L. Gosse has been Lieutenant Governor. The Legislature has 46 members elected for a maximum term of five years. On April 2, 1974, 31 Liberals, 12 Progressive Conservatives and three New Democrats were elected to the province's 51st Legislature and 28th since Confederation.

Each member of the House of Assembly is paid an annual indemnity of \$9,600 and an annual expense allowance of \$4,800. In addition to the amounts to which they are entitled under the House of Assembly Act, the Premier of the province receives an annual salary of \$25,000, all other Cabinet members \$21,000 or such lesser salary as the Governor in Council may determine, the Leader of the Opposition \$21,000, the Speaker \$11,000, the Deputy Speaker \$3,500, and any member occupying the recognized position of leader of a recognized party other than the Premier and Leader of the Opposition \$6,000.

The Executive Council of Nova Scotia as at January 1975

Premier, President of the Executive Council and
Chairman of the Nova Scotia Power
Commission, Hon. Gerald A. Regan
Minister of Finance and Chairman of the Treasury
Board, Hon. Peter M. Nicholson

Provincial Secretary, Minister of Recreation and
Minister in charge of administration of the
Residential Tenancies Act, Hon. A. Garnet
Brown

Minister of Highways and Minister of Mines, Hon. Leonard L. Pace

Minister of Public Works, Hon. Benoit Comeau

Minister of Education, Hon. J. William Gillis

Attorney General, Minister in charge of administration of the Civil Service Act and the Civil Service Joint Council Act and Minister in charge of administration of the Human Rights Act, Hon. Allan E. Sullivan

Minister of Municipal Affairs and Minister in charge of administration of the Liquor Control Act, Hon. J. Fraser Mooney

Minister of the Environment, Minister of Tourism and Minister in charge of administration of the EMO (NS) Act and Regulations, Hon. Glen M. Bagnell

Minister of Lands and Forests, Hon. Maurice E. DeLory

Minister of Agriculture and Marketing, Hon. John Hawkins

Minister of Development, Hon. George M. Mitchell

Minister of Social Services, Hon. Harold M. Huskison

Minister of Fisheries, Hon. Alexander M. Cameron

Minister of Labour and Minister in charge of administration of the Housing Development Act, Hon. Walter R. Fitzgerald

Minister of Public Health, Hon. William M. MacEachern

Minister without portfolio responsible for the Consumer Services Act, Hon. Maynard C. MacAskill.

3.3.1.4 New Brunswick

The government of New Brunswick has a Lieutenant Governor, an Executive Council and a Legislative Assembly. The Honourable H.J. Robichaud, sworn in October 8, 1971, is the present Lieutenant Governor. The Legislature elected November 18, 1974 is the 48th in New Brunswick's history and the 21st since Confederation. It has 58 members, at present 33 Progressive Conservatives and 25 Liberals, elected for a statutory term not to exceed five years.

The Premier receives \$25,000 per annum in addition to the salary for any other portfolio he may hold. Each Cabinet Minister is paid \$16,000; each member of the Legislative Assembly receives \$8,000 and a \$2,500 allowance for expenses. The Leader of the Opposition receives an additional \$16,000. The Speaker and Deputy Speaker are paid \$5,000 and \$2,500, respectively, in addition to the regular indemnity.

The Executive Council of New Brunswick as at December 31, 1974

Premier, Hon. Richard Hatfield

Minister of Justice, Hon. Paul S. Creaghan

Minister of Finance and Chairman of the New Brunswick Electric Power Commission, Hon. Edison Stairs

Chairman of Treasury Board, Hon. Stewart Brooks

Provincial Secretary and Minister of Fisheries, Hon. Omer Léger

Minister of Supply and Services, Hon. George Horton

Minister of Highways, Hon. Wilfred Bishop

Minister of Natural Resources, Hon. Roland Boudreau

Minister of Agriculture and Rural Development, Hon. Malcolm McLeod

Minister of Health, Hon. G.W.N. Cockburn

Minister of Social Services, Hon. Leslie Hull

Minister of Labour, Hon. Rodman E. Logan

Minister of Education, Hon. Gerald Merrithew

Minister of Municipal Affairs, Hon. Horace B. Smith

Minister of Economic Growth, Hon. Lawrence Garvie

Minister of Youth, Hon. Jean-Pierre Ouellet

Minister of Tourism and Environment, Hon. Fernand Dubé.

3.3.1.5 Quebec

In Quebec, legislative and executive powers are vested in the National Assembly and the Executive Council. As the representative of the Crown, the Lieutenant Governor, the Honourable Hugues Lapointe, plays a role in the functioning of both branches.

The National Assembly consists of 110 members elected for a maximum term of five years. Party standings as of July 1975 were as follows: Liberals 100, Parti Québécois six, Ralliement des créditistes two, Union nationale one and Independent one.

All members receive an annual indemnity of \$22,700 and a tax-free representation allowance of \$7,000. In addition, the Executive Council Act and the Legislative Assembly Act provide for additional taxable allowances for the Prime Minister (\$34,050), ministers (\$24,970), ministers without portfolio (\$22,700), the Speaker of the National Assembly (\$24,970), deputy speakers (\$11,350), parliamentary assistants (\$6,810), the Leader of the official Opposition (\$24,970), leaders of other recognized parties (\$10,215), the House Leader of the official Opposition (\$10,215), house leaders of other recognized parties (\$9,080), Chief

Government Whip (\$10,215), Chief Whip of the official opposition (\$6,810), whips of other recognized parties and deputy whips (\$5,675) and the chairmen of elected commissions (\$3,405). Internal regulations also provide for allowances for specified travelling by a member, for maintaining an office in his constituency and for a second residence in Quebec in cases where the member represents a riding outside the capital area.

Members of the Executive Council of Quebec as at January 15, 1976

Prime Minister, Hon. Robert Bourassa
 Vice-Prime Minister and Minister of Justice, Hon. Gérard D. Lévesque
 Minister of Education, Hon. Jean Bienvenue
 Minister of Industry and Commerce, Hon. Guy Saint-Pierre
 Minister of Finance, Hon. Raymond Garneau
 Minister of Intergovernmental Affairs, Hon. François Cloutier
 Minister of Public Works and Supply, Hon. William Tetley
 Minister of Lands and Forests, Hon. Normand Toupin
 Minister of Agriculture, Hon. Kevin Drummond
 Minister of Cultural Affairs, Hon. Jean-Paul L'Allier
 Minister of Labour and Manpower, Hon. Gérald Harvey
 Minister of Natural Resources, Hon. Jean Cournoyer
 Minister of Tourism, Fish and Game, Hon. Claude Simard
 Minister of the Civil Service, Minister of State for Intergovernmental Affairs and Minister of State for Finance, Hon. Oswald Parent

Minister of Municipal Affairs and of the Environment, Hon. Victor C. Goldbloom
 Minister of Transport, Hon. Raymond Mailloux
 Minister of Social Affairs, Hon. Claude Forget
 Minister of Communications, Hon. Denis Hardy
 Minister of Revenue, Hon. Robert Quenneville
 Minister of Consumer Affairs, Co-operatives and Financial Institutions and Minister of Immigration, Hon. Lise Bacon
 Solicitor General, Hon. Fernand Lalonde
 Minister of State for Agriculture, Hon. Georges Vaillancourt
 Minister responsible for the High Commission for Youth, Recreation and Sport, Hon. Paul Phaneuf
 Minister of State for the Executive Council, for the Quebec Planning and Development Bureau and for the Eastern Quebec Development Bureau, Hon. Bernard Lachapelle
 Minister of State for Transport and Minister of State for Finance, Hon. Paul Berthiaume
 Minister of State for Social Affairs, Hon. Julien Giasson.

3.3.1.6 Ontario

The government of Ontario consists of a Lieutenant Governor, an Executive Council and a Legislative Assembly. In April 1974 the Honourable Pauline McGibbon took office as Lieutenant Governor. The Legislative Assembly is composed of 125 members elected for a statutory term not to exceed five years. At the general election September 18, 1975, 51 Progressive Conservatives, 38 New Democrats and 36 Liberals were elected to the province's 30th Legislature.

In addition to the regular ministries there are the following provincial agencies: the Niagara Parks Commission, the Ontario Municipal Board, Ontario Hydro, the St. Lawrence Development Commission, the Ontario Northland Transportation Commission, the Liquor Control Board and the Liquor Licence Board.

Under the provisions of the Legislative Assembly Act (RSO 1970, c.240 as amended) each member of the Assembly is paid an annual indemnity of \$15,000 and an expense allowance of \$7,500. In addition, the Speaker receives a special annual indemnity of \$9,000, the Chairman of the Committee of the Whole House \$5,000 and the Leader of the Opposition a salary of \$18,000. Each member of the Cabinet having charge of a ministry receives the ordinary indemnity as a member of the Legislature in addition to his salary as a Minister of the Crown. The salary provided in the Executive Council Act for the Premier is \$25,000 and for a Cabinet Minister having charge of a ministry \$18,000. The Leader of the Opposition receives a representation allowance of \$3,000 per annum. Each Minister without portfolio receives an annual salary of \$7,500.

The Executive Council of Ontario as at October 1975

Premier and President of the Council, Hon. William G. Davis
 Minister of Housing, Hon. John Rhodes
 Provincial Secretary for Resources Development, Hon. Donald R. Irvine

Attorney General, Hon. Roy McMurtry
 Minister of Revenue, Hon. Arthur K. Meen
 Minister of Agriculture and Food, Hon. William Newman

Minister of the Environment, Hon. George A. Kerr
 Minister of Community and Social Services, Hon. James Taylor
 Provincial Secretary for Justice and Solicitor General, Hon. John P. MacBeth
 Minister of Education, Hon. Thomas L. Wells
 Minister of Labour, Hon. Bette Stephenson
 Treasurer of Ontario and Minister of Economics and Intergovernmental Affairs, Hon. W. Darcy McKeough
 Minister of Correctional Services, Hon. John Smith
 Minister of Transportation and Communications, Hon. James Snow
 Minister of Natural Resources, Hon. Leo Bernier
 Chairman of the Management Board of Cabinet, Hon. James Auld

Minister of Government Services, Hon. Margaret Scrivener
 Minister of Health, Hon. Frank S. Miller
 Minister of Consumer and Commercial Relations, Hon. Sidney B. Handleman
 Minister of Colleges and Universities, Hon. Harry Parrott
 Provincial Secretary for Social Development, Hon. Margaret Birch
 Minister of Industry and Tourism, Hon. Claude Bennett
 Minister of Energy, Hon. Dennis R. Timbrell
 Minister of Culture and Recreation, Hon. Robert S. Welch
 Chairman of the Cabinet and Minister without portfolio, Hon. René Brunelle
 Minister without portfolio, Hon. L.C. Henderson.

3.3.1.7 Manitoba

In addition to a Lieutenant Governor, Manitoba has an Executive Council composed of 15 members and a Legislative Assembly of 57 members elected for a maximum term of five years. The Honourable William John McKeag has been Lieutenant Governor since September 2, 1970. As a result of the general election June 28, 1973, 31 New Democrats, 21 Progressive Conservatives and five Liberals were elected to the 30th Legislature. After two by-elections in June 1975, the NDP held 31 seats, the Progressive Conservatives 23 and the Liberals three.

The Premier of the province is paid a salary of \$16,600 a year and each of the other members of the Cabinet \$15,600. Members of the Legislature are each paid a sessional indemnity of \$9,600 and a tax-free expense allowance of \$4,800. Each member attending the session receives an additional allowance of \$900 for expenses incidental to the discharge of his duties as member. The Leader of the Opposition is paid \$15,600. The Speaker of the Legislative Assembly receives an additional indemnity of \$5,000 and expenses not exceeding \$1,000 in aggregate. The Deputy Speaker receives an additional indemnity of \$2,500 and expenses not exceeding \$500 in aggregate. Members required to live away from home receive a per diem allowance of \$25 from the opening of the session to prorogation excepting days during an adjournment of the Assembly for a period of four or more continuous days.

The Executive Council of Manitoba as at December 31, 1974

Premier, President of the Council, Minister responsible for the Manitoba Hydro Act, Minister of Finance and Minister of Dominion-Provincial Relations, Hon. Edward Schreyer
 Minister of Labour, Minister charged with the administration of the Civil Service Act, the Civil Service Superannuation Act and the Public Servants Insurance Act, Hon. A.R. Paulley
 Minister of Mines, Resources and Environmental Management and Minister responsible for the Manitoba Development Corporation Act, Hon. Sidney Green
 Minister of Agriculture, Hon. Samuel Uskiw
 Minister of Urban Affairs and Minister responsible for the Manitoba Housing and Renewal Corporation, Hon. Saul A. Miller
 Minister of Tourism, Recreation and Cultural Affairs, Hon. René Toupin
 Minister of Industry and Commerce, Hon. Leonard Evans
 Minister of Highways, Hon. Peter Burtiak

Attorney General and Keeper of the Great Seal and Minister of Municipal Affairs, Hon. Howard Pawley
 Minister of Education and Minister of Colleges and Universities Affairs, Hon. Ben Hanuschak
 Minister of Public Works, Hon. Russell Doern
 Minister of Health and Social Development and Minister responsible for Manitoba Lotteries Act, Hon. L.L. Desjardins
 Minister of Northern Affairs, Hon. Ronald McBryde
 Minister of Consumer, Corporate and Internal Services and Minister responsible for the Manitoba Telephone System, Hon. Ian Turnbull
 Minister responsible for Manitoba Public Insurance Corporation, Hon. Billie Uruski
 Minister responsible for Corrective and Rehabilitative Services, Hon. Joseph R. Boyce
 Minister of Co-operative Development and Minister responsible for Lands, Forests and Wildlife Resources, Hon. Harvey Bostrom.

3.3.1.8 Saskatchewan

The government of Saskatchewan consists of a Lieutenant Governor, an Executive Council and a Legislative Assembly. Since February 3, 1970 the Honourable Stephen Worobetz has been Lieutenant Governor. The statutory number of members of the Legislative Assembly is 61, elected for a maximum term of five years. As a result of the general election June 11, 1975, 39 New Democrats, 15 Liberals and seven Progressive Conservatives were elected to form Saskatchewan's 18th Legislature.

The Premier receives \$20,000 and each Cabinet Minister \$15,000 annually in addition to a sessional indemnity and allowance. The Leader of the Opposition receives \$15,000 plus an office allowance of \$24,000 per annum, the Speaker \$5,000 and the Deputy Speaker \$3,000.

Each member of the Legislature is paid a sessional indemnity of \$6,000, an expense allowance of \$4,000 and a sessional allowance of \$2,500. Each of the members for the three northernmost constituencies of Prince Albert East, Athabasca and Meadow Lake receives a \$6,500 sessional indemnity and a \$4,250 expense allowance. Government and Opposition Whips are paid an annual allowance of \$1,000 each and legislative secretaries an annual allowance of \$3,000 each.

The Executive Council of Saskatchewan as of July 1975

Premier and President of the Council, Hon. A.E.

Blakeney

Attorney General, Hon. R.J. Romanow

Minister of Industry and Commerce, Hon. J.R.

Messer

Minister of Health, Hon. W.E. Smishek

Minister of Labour and Minister of Social Services,
Hon. G.T. Snyder

Minister of Human Resources Development,
Minister of Northern Saskatchewan and Minister
of Saskatchewan Fur Marketing, Hon. G.R.
Bowerman

Minister of the Environment, Hon. N.E. Byers

Minister of Education, Minister of Continuing
Education and Minister of Municipal Affairs,
Hon. G. MacMurchy

Minister of Highways and Transportation and
Minister in charge of the Saskatchewan

Transportation Company, Hon. E. Kramer

Minister of Government Services and Minister in
charge of Telephones, Hon. J.E. Brockelbank

Minister of Finance, Hon. E. Cowley

Provincial Secretary, Minister of Culture and

Youth and Minister in charge of the

Saskatchewan Housing Corporation, Hon. E.

Tchorzewski

Minister of Consumer Affairs and Minister of Co-
operative Development, Hon. W.A. Robbins

Minister of Natural Resources, Hon. J.R.

Kowalchuk

Minister of Agriculture, Hon. Edgar Kaeding

Minister of Mineral Resources, Hon. Ed Whelan.

3.3.1.9 Alberta

In addition to the Lieutenant Governor (since April 1974 the Honourable R. Steinhauer) the government of Alberta is composed of an Executive Council and a Legislative Assembly of 75 members elected for a maximum period of five years. On March 26, 1975, 69 Progressive Conservatives, four members of the Social Credit party, one New Democrat and one Independent-Social Credit member were elected to form the 18th Legislature.

Each member of the Legislative Assembly receives a sessional indemnity of \$9,000, a \$4,500 expense allowance and \$30 for each day during the session when the member is necessarily absent from his ordinary place of residence. In addition to the indemnity and expense allowance, the Speaker receives a salary of \$8,000 and the Deputy Speaker \$5,000. The Leader of the Opposition's salary in addition to the indemnity and expense allowance is \$22,000. The Speaker, Deputy Speaker and Leader of the Opposition also receive \$30 for each day during the session when they are necessarily absent from their ordinary place of residence. In addition to the sessional indemnity and allowance the Premier receives \$27,000, other Ministers \$22,000 and Ministers without portfolio \$16,000.

The Executive Council of Alberta as at April 3, 1975

Premier and President of the Executive Council,

Hon. Peter Lougheed

Deputy Premier and Minister of Transport, Hon.

Hugh M. Horner

Minister of Energy and Natural Resources, Hon.

Donald R. Getty

Minister of Federal and Intergovernmental Affairs,

Hon. Louis D. Hyndman

Minister of Hospitals and Medical Care, Hon.

Gordon T.W. Miniely

Provincial Treasurer, Hon. C. Mervin Leitch

Minister of Labour, Hon. Neil S. Crawford

Minister of Advanced Education and Manpower,

Hon. Bert Hohol

Minister of Housing and Public Works, Hon.

William J. Yurko

Minister of Environment, Hon. David J. Russell
 Attorney General, Hon. James L. Foster
 Solicitor General, Hon. Roy A. Farran
 Minister of Utilities and Telephones, Hon. Allan A. Warrack
 Minister of Government Services, Hon. Horst A. Schmid
 Minister of Social Development and Health, Hon. Helen Hunley
 Minister of Business Development and Tourism, Hon. Robert W. Dowling
 Minister of Parks, Recreation and Wildlife, Hon. J.A. Adair

Minister of Municipal Affairs, Hon. Richard Johnston
 Minister of Consumer and Corporate Affairs, Hon. Graham Harle
 Minister of Agriculture, Hon. Marvin Moore
 Minister of Education, Hon. Julian Koziac
 Minister without portfolio (Native Affairs), Hon. Robert Bogle
 Minister without portfolio, Hon. Stu McCrae
 Minister without portfolio, Hon. Dallas Schmidt.

3.3.1.10 British Columbia

The government of British Columbia consists of a Lieutenant Governor, an Executive Council and a Legislative Assembly. Since March 19, 1973 the Lieutenant Governor has been the Honourable Walter Stewart Owen. The Legislative Assembly has 55 members who are elected for a term not to exceed five years. Following the December 11, 1975 election, 35 Social Credit members, 18 New Democrats, one Liberal and one Progressive Conservative were elected to the Assembly. (One Social Credit seat is under appeal.)

Each member of the Executive Council and the Legislative Assembly receives an annual allowance of \$16,000 and an annual expense allowance of \$8,000. In addition, the Premier is paid an annual salary of \$28,000, each Cabinet Minister (with portfolio) \$24,000 and each member of the Executive Council without portfolio \$21,000. The Leader of the Opposition and the Speaker receive special expense allowances of \$19,000; the Deputy Speaker and the Leader of a recognized political party, \$8,500.

The Executive Council of British Columbia as at December 31, 1975

Premier, President of the Council, Hon. William R. Bennett
 Provincial Secretary, Deputy Prime Minister and Minister of Recreation and Tourism, Hon. Grace M. McCarthy.
 Minister of Finance, Hon. Evan Wolfe
 Attorney General, Hon. Garde B. Gardom
 Minister of Health, Hon. Bob McClelland
 Minister of Human Resources, Hon. William N. Vander Zalm
 Minister of Economic Development and Minister of Agriculture, Hon. Donald M. Phillips
 Minister of Labour, Hon. Allan Williams

Minister of Mines and Petroleum Resources and Forests, Hon. Thomas M. Waterland
 Minister of Municipal Affairs and Housing, Hon. Hugh Curtis
 Minister of Education, Hon. Pat L. McGeer
 Minister of Environment, Hon. Jim Nielsen
 Minister of Consumer Services, Hon. Kenneth Rafe Mair
 Minister of Transportation and Communication, Hon. John (Jack) Davis
 Minister of Highways and Public Works, Hon. Alex V. Fraser.

3.3.2 Territorial governments

3.3.2.1 Yukon Territory

The constitution for the government of the Yukon Territory is based on two federal statutes: the Yukon Act (RSC 1970, c.Y-2) and the Government Organization Act (SC 1966, c.25). The Yukon Act provides for a Commissioner as head of government and for a legislative body called the Council. Under the Government Organization Act, the Minister of Indian Affairs and Northern Development is responsible (with the Governor in Council) for directing the Commissioner in the administration of the Territory.

The executive level of the Yukon government consists of the Commissioner and Executive Committee. The Office of the Commissioner incorporates several functions: he is the head of the territorial government and the senior representative of the Department of Indian Affairs and Northern Development in the Yukon Territory. In addition, the Commissioner performs duties similar to those of a Lieutenant Governor in relation to the Legislature.

In administering the territorial government the Commissioner is assisted by the Executive Committee, which is modelled on a cabinet structure. The Committee is composed

of the Commissioner, as Chairman, with two Assistant Commissioners and three Councillors as members. Each of the members is assigned portfolios by the Chairman.

The territorial government forgoes its taxing authority on private and corporate incomes and collection of corporate taxes and succession duties in deference to annual federal-territorial financial agreements. Under these agreements the federal government contributes the funds necessary to cover the deficit arising from the forecast of revenues available to the Territory and the forecast cost of services to be provided.

Administration. The territorial public service, comprising approximately 1,200 employees, is organized into 11 conventional administrative departments and a number of special service departments. Whitehorse is the administrative centre of the government. A few departments have necessary regional postings and territorial agents represent the government in outlying communities.

Health services and land are administered jointly by the territorial and federal governments. Health services are administered and operated by the Yukon Hospital Insurance/Health Care Insurance Services Department in conjunction with the Department of National Health and Welfare. The program will eventually be transferred to the territorial department.

Certain areas have been designated to the Commissioner for administration under the Territory's Lands Ordinance. The remaining land is under the jurisdiction of the Department of Indian Affairs and Northern Development.

In addition to these shared responsibilities, the federal government, through the Department of Indian Affairs and Northern Development, retains control of the natural resources of the Yukon, except game. Local administration is carried out by federal public servants.

Legislature. The Yukon Act delineates the jurisdiction of the Council. It is like those of provincial assemblies with two exceptions: matters touching on natural resources are reserved to the federal government, and budgetary matters are reserved to the Commissioner. Council is called into session and prorogued by the Commissioner.

Legislative authority for the Yukon is vested in the Commissioner in Council. All bills must be approved by Council and be assented to by the Commissioner before becoming law. As in other jurisdictions, the Governor in Council may disallow any ordinance within one year. Ordinances are printed on a sessional basis and consolidated annually.

Amendments to the Yukon Act passed by Parliament in 1974 provided for an immediate expansion of the membership of Council from seven to 12 and for future expansion to 20 members at the discretion of Council. Members are elected for a four-year term of office. The Council nominates three of its members to the Executive Committee who will each administer one of the following portfolios: Education, Local Government, and Health, Welfare and Rehabilitation. The Council meets at least twice a year usually in the territorial capital, Whitehorse. A daily record of Council sessions is published under the authority of the Speaker and the Queen's Printer.

Commissioner, Council and Council staff of the Yukon Territory as at December 31, 1974

Commissioner, J. Smith

Assistant Commissioner (Executive), P.J. Gillespie

Assistant Commissioner (Administrative), M.E.

Miller

Clerk of Council, L.J. Adams

Legal Adviser to the Commissioner and Council, P.

O'Donoghue

Executive Committee: J. Smith, chairman; P.J.

Gillespie, M.E. Miller, F. Whyard, G. McIntyre,

J.K. McKinnon, members; L.J. Adams, secretary.

Members of Council: A. Berger, B. Fleming, J.

Hibberd, D. Lang, E. Millard, S. McCall, W.

Phelps, D. Taylor, F. Whyard, G. McIntyre, J.K.

McKinnon.

3.3.2.2 Northwest Territories

The Northwest Territories Act (RSC 1970, c.N-22) provides for an executive, legislative and judicial structure. The Commissioner is the chief executive officer, appointed by the federal government and responsible for the administration of the Northwest Territories under the direction of the Minister of Indian Affairs and Northern Development. In practice, all major policy decisions are taken on the advice of this Council. The Commissioner can spend funds only to the extent voted by Council and all new revenue measures are subject to Council

approval. Normally the Commissioner obtains federal approval of proposed legislation and budgetary measures before submitting them to Council.

The Council of the Northwest Territories consists of 15 elected members and has a life of four years. It meets at least twice a year, usually for three weeks at a January session and two weeks at a spring session, but more often if required. A Clerk of Council and a legal adviser provide the main administrative assistance and debates are recorded verbatim.

The Northwest Territories Act gives the Territorial Council authority to legislate in most areas of government activity except for natural resources other than game; these are reserved to the federal government. Legislation must receive three readings and have the assent of the Commissioner. The federal government may disallow any ordinance within one year. The Commissioner proposes most legislation but private members' bills are allowed, except for money matters, which are the prerogative of the Commissioner. Besides draft legislation, the Council gives considerable time to policy papers in which the Commissioner asks for advice or seeks authority to take a particular course of action.

Parliament approved significant legislation in 1974 for the political development of the Northwest Territories. Amendments to the Northwest Territories Act increased the number of elected members of the Territorial Council from 10 to 15 and eliminated appointed members. Elections were held in March 1975 for the first entirely elected Council. The new Council selects its speaker from among its members; previously the Commissioner was the presiding officer. Council also nominates two other members to sit on the Executive Committee along with the Commissioner, who is chairman, the Deputy Commissioner and an Assistant Commissioner. This committee is to advise the Commissioner on broad policy matters and to act as a consultative body for him.

The Minister of Justice is the Attorney General of the Northwest Territories under the Criminal Code of Canada, with responsibility for criminal but not for civil matters or the constitution or organization of the courts (see Chapter 2). Law enforcement is provided by the Royal Canadian Mounted Police.

Administration. In 1963 a full-time Commissioner was appointed and charged with building up a territorial administration located initially in Ottawa. In September 1967 the Commissioner and about 50 staff members moved to Yellowknife and assumed responsibility for the game management service, municipal affairs, the issuing of all licences, tax collection and the operation of the liquor system (already staffed by territorial contract employees). Operational responsibility for other government services was transferred from federal to territorial control in the Mackenzie District on April 1, 1969, and in the Eastern Arctic on April 1, 1970. The territorial government is structured to carry out its administration through four program and four service departments, each under the direction of a senior public servant reporting to one member of the Executive which consists of the Commissioner, the Deputy Commissioner and two Assistant Commissioners. The field staff is organized into four regions with regional directors at Fort Smith, Inuvik and Frobisher Bay and a district service officer at Rankin Inlet.

Continuing federal responsibility. The Government Organization Act charges the Minister of Indian Affairs and Northern Development with responsibility for the development of the North and for the general co-ordination of federal activities in the area. Other federal government agencies, such as the Northern Health Service of the Department of National Health and Welfare and the Royal Canadian Mounted Police, are responsible for health and police services with the territorial government sharing their costs. The Ministry of Transport operates mainline airports throughout the whole of the North; the Canadian Broadcasting Corporation provides special shortwave northern broadcasts and maintains local stations in the Territories. Federal cost-shared national assistance programs, within the competence of the territorial government, are available to it on the same conditions as they are to the provinces.

Extensive financial assistance is given to the territorial government under special federal-territorial agreements, which usually cover a period of five years. These agreements allocate the financial responsibility of each government for the provision of services in the Territories and fix the amount of the federal financial payments to the territorial government for the life of the agreement. At present territorial revenues fall short of meeting the expenditures of the territorial government. Under the financial agreements, all taxes on personal and corporate incomes, corporation taxes and succession duties are reserved to the federal government.

Excluding amortization of borrowings, the territorial government, during the year ended

March 31, 1975, spent about \$102 million on operating accounts and about \$32 million on capital projects. Of these expenditures, approximately \$12 million was raised within the Territories through taxes, licences and liquor revenues and \$5.6 million was recovered from residents of the Territories for services supplied.

Commissioner, Council and Council staff of the Northwest Territories as at December 31, 1974

Commissioner, S.M. Hodgson

Deputy Commissioner, J.H. Parker

Clerk of the Council, W.H. Remnant

Legal Adviser, J.R. Slaven

Members of the Council: Bill Lyall, Ipeelee

Kilabuk, Mark Evaluarjuk, James Wah-Shee,

Don M. Stewart, Ludy Pudluk, Tom Butters,
Peter Ernerk, George Barnaby, William Lafferty,
Arnold McCallum, Bryan Pearson, John Steen,
Dave Nickerson, David Searle.

3.4 Royal Commissions and Commissions of Inquiry

3.4.1 Federal commissions

Royal Commissions, now generally called Commissions of Inquiry, established up to May 1, 1970 under Part I of the Inquiries Act are given in previous editions of the *Canada Year Book* beginning with the 1940 edition. The following list presents the federal commissions established between that date and April 30, 1975, and the name of the chief commissioner or chairman.

Airport Inquiry Commission, Hon. Justice Hugh F. Gibson

Foreign Claims Commission, Hon. Thane A. Campbell

Food Prices Review Board, Mrs. Beryl Plumtre

Parliamentary Accommodation, Hon. D.C. Abbott

Inquiry into the Marketing of Beef, Mr. Maxwell W. Mackenzie

Steel Profits Inquiry, Mr. Justice W.L. Estey

Royal Commission on Corporate Concentration, Robert Bryce.

Federal commissions submitting final reports between those dates are: Farm Machinery Costs (under Chairman C.L. Barber), Status of Women in Canada (under Mrs. J. Bird), Steel Profits Inquiry and the Airport Inquiry Commission. In addition to the other active commissions established since 1970, the Indian Claims Commission, which was established under Chairman Dr. L.I. Barber in December 1969, is still operating.

3.4.2 Provincial commissions

The following list presents the provincial commissions established since December 31, 1973, the name of the chief commissioner or chairman, and the date each was established:

Newfoundland

St. John's Urban and Regional Study, Alex G. Henley, June 7, 1974

Enquiry into Conditions of Events Leading to the Closing of Upper Gillies Elementary School, Magistrate Terrence J. Corbett, November 5, 1974.

Quebec

Inquiry into the freedom of activity in the trade union movement in the construction industry, Robert Cliche, March 25, 1974.

Ontario

To inquire into the circumstances respecting the conduct and the performance of duties by police officers and constables at the Landmark Motor Inn Hotel in or about the town of Fort Erie on May 11, 1974, His Hon. Judge John Abercrombie Pringle, June 7, 1974

To inquire into the nature and extent and causes of the flooding of the Grand River on May 16, 17 and 18, 1974, His Hon. Judge Wilfred Wesley Leach, June 19, 1974

To investigate all matters related to health and safety involved in the working conditions and working environment in mines in Ontario, Dr. James Milton Ham, September 10, 1974

To examine, evaluate and make appropriate recommendations on the structure, organization and operations of local government within the Metropolitan Toronto area, including all municipal governments, boards and commissions, Hon. John P. Robarts, September 10, 1974

To inquire into all allegations made by certain persons respecting the manner in which inmates have been treated at the Toronto jail, His Hon. Judge B. Shapiro, October 9, 1974

To inquire into recent allegations made against certain members of the Metropolitan Toronto Police Force, Mr. Justice Donald Raymond Morand, October 23, 1974.

Manitoba

Inquiry into livestock marketing in Manitoba, Dr. A.W. Wood, October 9, 1974

Commission to review the ward boundaries and community boundaries of the city of Winnipeg, Mr. Peter Taraska, January 18, 1974.

British Columbia

To examine the organization and operation of Jericho Hill School and, if appropriate, to suggest alternate systems of management, June 18, 1974.

3.5 Local government

Local government in Canada comprises all government entities created by the provinces and territories to provide services that can be more effectively discharged through control at the local level. Broadly speaking, local government services are identified in terms of nine main functions: protection, transportation, environmental health, public health, welfare, environmental development, recreation, community services and education. In addition local government, through the medium of government enterprises, may operate such facilities as public transit and the supply of electricity and gas. Education is normally administered separately from the other local functions.

Many local government organizations antedate Confederation but under the British North America Act local government was made a responsibility of the provincial legislatures, a responsibility subsequently extended to the territories when their governments were constituted in the present forms. The unit of local government, apart from the school board, is usually the municipality which is incorporated as a city, town, village, township or other designation depending on the province. The powers and responsibilities of municipalities are those delegated to them by statutes passed by their respective provincial or territorial legislatures. Some of these statutes apply to all municipalities within a province, some to a certain type or group, and many to one municipality only.

Rapid and continuing urbanization during the past two decades and the demand for services in rural areas comparable to those available in urban areas have placed great strains on local government. These strains have been aggravated by the inelasticity of the major local revenue source — the taxation of real property. At the same time the small populations of most municipalities have hindered attempts to provide services that require economies of scale for efficient operation.

The provinces have taken a number of steps to assist local governments to meet these challenges. An increasing number of special agencies or joint boards and commissions have been created to provide certain services for groupings of municipalities. Local government revenue has been supplemented by grants from the provinces, either made unconditionally or for specific purposes. Certain functions traditionally assigned to local government have been assumed in whole or in part by the provinces. Besides encouraging the amalgamation of small units, the provinces have also established new levels of local government to provide services which can be better discharged at a regional level. "Second-tier" local governments now cover the whole of British Columbia and are planned for all of Ontario, where several now exist, and for Quebec, where three have been established. What may become a pattern for the next stage in municipal development was established in Manitoba on January 1, 1972 when the Metropolitan Corporation of Greater Winnipeg and its constituent municipalities were amalgamated into a single city.

The major local revenue source available to local government is the taxation of real property, supplemented in varying degrees by taxation of personal property, businesses and amusements. Revenue is also derived from licences, permits, rents, concessions, franchises, fines and surplus funds from municipal enterprises.

Since a description of all forms of local government would be too complex for easy comprehension, the following paragraphs describe only municipal organization in each province and in the territories as at January 1, 1974. Table 3.6 gives the total number of each type of municipality in each province and territory.

Newfoundland. At January 1, 1974, Newfoundland had 277 incorporated areas including two cities, 102 towns, 10 rural districts, 42 local improvement districts, 120 local government communities and one metropolitan area. The towns, rural districts and local improvement districts operate under the Local Government Act; towns and rural districts have elected

councils and local improvement districts have appointed trustees. Local government communities are established under the Community Councils Act in the smaller settlements and have limited powers and functions. The St. John's Metropolitan Area, incorporated under a special Act, covers the area adjoining and surrounding the city of St. John's and the town of Mount Pearl and is similar in organization to a local improvement district. There are no rural municipalities in the usual sense. Only about one fifth of 1% of the total area is municipally organized. Municipalities are supervised by the Department of Municipal Affairs and Housing.

Prince Edward Island. In this province, one city and eight towns have been incorporated under special Acts and 24 villages have been established under the Village Services Act. There is no municipal organization for the remainder of the province, although it is divided into three counties which are subdivided into school sections with elected school boards. The organized municipalities are administered by the Department of Community Services.

Nova Scotia. This province is geographically divided into 18 counties; 12 of these constitute separate municipalities and the remaining six are each divided into two districts or municipalities, making a total of 24 rural municipalities. Within and under the jurisdiction of these municipalities there are 25 incorporated villages that provide limited services. In addition, there are three cities operating under special charters and special legislation and 38 towns operating under the Town Incorporation Act. Although geographically located within counties or districts, cities and towns are entirely independent of them except as to joint expenditures. There is no part of the province that is not municipally organized. Supervision of municipalities is exercised through the Department of Municipal Affairs.

New Brunswick. In New Brunswick municipal organization now includes six cities, 20 towns and 85 villages. The remainder of the province is not municipally organized and is administered by the provincial government. There are 205 unincorporated local service districts established to provide services that are municipal in nature but these are administered by the Department of Municipal Affairs and are not municipal organizations. Municipalities are supervised by the Department of Municipal Affairs.

Quebec. The more densely settled areas of Quebec, comprising about one third of the area of the province, are municipally organized; the remainder is governed by the province as "territories". The organized area is divided into 74 county municipalities which look after matters of general interest within the county. Cities and towns are excluded from the county system for political and administrative purposes except for certain joint expenditures. The remaining municipal corporations and the unorganized territory within counties fall under the county system. The counties have no direct powers of taxation; funds to finance the services falling within their jurisdiction are provided by the municipalities forming part thereof. The municipalities are governed by Special Charter, by the Cities and Towns Act or by the Municipal Code. On January 1, 1974, there were 1,577 municipalities comprising 68 cities, 204 towns, 270 villages, 489 parishes, 153 townships, 13 united townships and 380 municipalities without designation. Major municipal consolidations began in 1965 with the fusion of the 14 municipalities on Île Jésus into the new city of Laval. At the beginning of 1970, the Montreal and Quebec Urban Communities and the Outaouais Regional Community were established in which integration of services will be staged gradually. Supervision of and assistance to municipalities are through the Department of Municipal Affairs and the Quebec Municipal Commission.

Ontario. Slightly more than one tenth of Ontario's area includes 95% of its total population and is municipally organized; the remainder is under direct provincial administration. The settled section of the province is divided into one metropolitan municipality, nine regional municipalities, one district municipality and 29 counties. In addition, there are 38 cities, six separated towns, five boroughs, 140 towns, 130 villages, 496 townships and 14 improvement districts. The Municipality of Metropolitan Toronto, in existence since January 1, 1954, encompasses one city and five boroughs and is responsible for assessments, police, water supply, sewerage, metropolitan road systems, planning, etc. The regional municipalities of Durham, Halton, Hamilton-Wentworth, Niagara, Ottawa-Carleton, Peel, Sudbury, Waterloo and York have replaced the county administrations in their respective areas and assumed certain responsibilities over all the municipalities within their boundaries. The District Municipality of Muskoka was incorporated on January 1, 1971 to assume responsibilities,

similar to those of the regional municipalities, over the reorganized municipalities of the former district of Muskoka. This form of regional government in Ontario is also contemplated in other areas. Each county, although an incorporated municipality, comprises the towns (with the exception of six separated towns), villages and townships situated within it. Some municipalities are located outside the counties in areas called districts. These districts are in the western and northern parts of Ontario and are not municipal entities. Supervisory control of municipalities is exercised by the Department of Economics and Intergovernmental Affairs and the Ontario Municipal Board under the Municipal Act and other Acts governing aspects of municipal government.

Manitoba. Manitoba has five cities, 33 towns, 39 villages and 106 rural municipalities. These are supervised by the Department of Municipal Affairs under the Municipal Act and special charters. However, the city of Winnipeg is responsible to the Department of Urban Affairs except for financial matters, for which it reports to the Department of Municipal Affairs. There are 19 local government districts incorporated under the Local Government Districts Act where the province has placed a resident administrator to carry out the functions of a municipal council. The unorganized areas are the direct responsibility of the provincial government.

Saskatchewan. All municipalities in Saskatchewan derive their powers from general Acts that are designated with the name of the type of municipality. There are 11 cities, 131 towns, 350 villages and 292 rural municipalities. The area so organized consists of most of the southern part of the province, the remainder of this portion being administered by the province through nine unincorporated local improvement districts. The northern part is sparsely populated and some municipal services are provided by the province through the operation of the Northern Administration District. Municipalities are supervised by the Department of Municipal Affairs.

Alberta. This province has an Act applying to each type of municipality and, under these Acts, the Department of Municipal Affairs supervises the nine cities, 102 towns, 168 villages, 18 municipal districts and 30 counties. The counties administer schools in addition to municipal functions. There are 22 improvement districts administered directly by the Department of Municipal Affairs and three special areas under the Special Areas Board also responsible to the Department of Municipal Affairs.

British Columbia. In 1967, the government of British Columbia instituted regional government in the province and by January 1, 1972, 28 regional districts had been established. These regional districts are developing and are assuming responsibility for certain services from municipalities within their boundaries as well as providing services to previously unorganized areas. There are 32 cities, 11 towns, 59 villages and 37 districts. Districts are mostly rural although some adjacent to the principal cities of Vancouver and Victoria are largely urban in character. Municipalities are supervised by the Department of Municipal Affairs. In addition, there are unincorporated local districts supervised by the Department of Lands, Forests, and Water Resources that have been set up to provide certain municipal services such as protection, waterworks, irrigation, etc.

Yukon Territory and Northwest Territories. In the Yukon Territory, there are two cities, one town and five local improvement districts; the Northwest Territories includes one city, three towns, three hamlets and seven local improvement districts. The local improvement districts in the Yukon and the hamlets in the Northwest Territories, although incorporated, are developmental forms of local government. Supervision of these municipalities is provided by the respective territorial governments.

3.6 External relations

3.6.1 Canada's international status

The growth of Canada's international status is reflected in the development of the Department of External Affairs. Until the 20th century Canadian negotiations with foreign countries were conducted through the British Foreign Office and dealings with other parts of the Empire through the Colonial Office; Canadian interests abroad were handled by British diplomatic and consular authorities and all Canadian communications to other governments went through the Governor General. The gradual recognition of Canadian autonomy in international affairs and increased Canadian responsibilities abroad made expansion of services and representation after 1920 not only inevitable but imperative. British diplomatic and consular authorities could no longer conveniently look after all Canadian interests. An important step in the evolution of the Department of External Affairs as the foreign service arm of the Canadian government resulted from an agreement reached at the 1926 Imperial Conference which changed the Governor General's role from that of representative of the British government to that of personal representative of the Sovereign. Britain, no longer officially represented here, appointed a High Commissioner to Canada in 1928; after July 1, 1927 correspondence from foreign governments, including that from the Dominions Office in London, was directed to the Secretary of State for External Affairs (a portfolio held by the Prime Minister until 1946) instead of to the Governor General.

In the 1920s and 1930s Canada established diplomatic relations with Australia, Belgium, France, Ireland, Japan, the Netherlands, New Zealand, South Africa and the United States and during the 1940s, with the wartime governments of Belgium, Czechoslovakia, Greece, the Netherlands, Norway, Poland, Yugoslavia functioning in London or Cairo, and with the Argentine Republic, Brazil, Chile, China, Cuba, Mexico, Newfoundland, Peru and the USSR. High Commissioners were accredited to India, Pakistan and Ceylon (Sri Lanka) and subsequently to other countries as they became independent and joined the Commonwealth. In the 1960s, Canada also developed its diplomatic relations in the French-speaking world, particularly with the newly independent francophone states of Africa. Relying on a system of multiple accreditation, Canada now has ambassadorial links with all of the 21 francophone African countries. Diplomatic relations were established with the Holy See in 1969 and with the People's Republic of China in 1970. Since then Canada has added new missions in Africa, Asia and the Middle East. Today, Canada maintains formal diplomatic relations with all countries in Latin America and the Middle East and has diplomatic, consular or trade representation in 134 countries.

Membership in international organizations has entailed establishment of other offices outside Canada. A Permanent Canadian Delegation to the United Nations in New York was set up in 1948; a year later a Canadian office was opened at the organization's European headquarters in Geneva. Now called Permanent Missions, these offices have since been expanded to include UN agencies in Paris and Vienna. As one of the founding members of the North Atlantic Treaty Organization (NATO) in 1949 Canada remains active in the Organization. When the NATO Permanent Council was established in 1952 a Canadian Permanent Delegation was set up in Paris (transferred to Brussels in 1967). A Canadian Permanent Delegation to the Organization for Economic Co-operation and Development is in Paris, while the Mission of Canada to the European Communities in Brussels is responsible for Canada's relations with the European Economic Community, the European Atomic Energy Community and the European Coal and Steel Community. Canada also maintains a Permanent Observer Mission to the Organization of American States in Washington, DC. In addition to these permanent international bodies and their various committees, officials of the Department of External Affairs represent Canada at many international conferences.

3.6.1.1 Diplomatic and/or consular representation

The addresses of Canadian representatives abroad and representatives of other countries in Canada may be found in Appendix 5.

3.6.1.2 Federal-provincial aspects of Canada's international relations

As a result of expanding provincial interests abroad machinery was established in 1967 within the Department of External Affairs to maintain liaison with the provinces and to

facilitate their international activities in a manner that would meet provincial objectives and be consistent with a unified Canadian foreign policy.

The federal government's position on provincial international relations was outlined in the 1968 White Paper *Federalism and international relations*, which emphasized that Canada's foreign relations must serve the interests of all provinces as well as those of its two major linguistic communities. To this end federal government policies include recognition of legitimate provincial interests beyond national borders and continued promotion of national unity through adequate projection internationally of Canada's distinct bilingual character.

Provincial participation at international conferences and in the work of international organizations on a wide range of subjects, including human and civil rights, education, health, agriculture and labour, is assured by the inclusion of interested provincial officials on Canadian delegations and by the canvassing of provincial governments for their views on the positions and attitudes which Canada might adopt on these subjects internationally.

Other aspects of Canada's international relations of particular interest to the provinces include the promotion of trade, investment, new industries, immigration, tourism, cultural exchanges, environmental questions, science and technology, assistance to developing countries and bilateral and multilateral agreements. The promotional activities of the provinces have led to an increase in the number of official provincial visits abroad. The federal government, through the Department of External Affairs and its Embassies and High Commissions, assists provincial officials by making arrangements and appropriate appointments for their visits abroad and in co-ordinating visits of foreign personalities to provincial capitals.

In matters of aid to developing countries, the federal government encourages wider federal-provincial consultation to ensure that specific provincial projects are co-ordinated with Canada's aid contribution as a whole.

Treaty-making powers. The federal government has exclusive responsibility for the conduct of external affairs as a matter of national policy affecting all Canadians. The policy of the federal government in discharging this responsibility is to promote the interest of the entire country and of all Canadians of the various provinces and territories within the over-all framework of a national policy.

Once it has been determined that what a province seeks to achieve through agreements, in fields of provincial jurisdiction, falls within the framework of Canadian foreign policy, the procedures provide for direct provincial participation in negotiating detailed arrangements with the competent authorities of the foreign country. When these arrangements are to be incorporated in an international agreement having legal effect, however, this can be achieved only through the exercise of the federal power to conclude treaties.

3.6.2 International activities

3.6.2.1 Canada and the Commonwealth

Originally a tightly knit coalition of five members, the Commonwealth has evolved into an international association of 33 sovereign states embracing approximately one quarter of the earth's land surface and population, the latter characterized by a diversity of races, colours, creeds and languages. Comprising both developed and developing countries, and governments committed to various international organizations, the Commonwealth represents a unique association whose members are bound by shared political and social values, similar attitudes and institutions, a similar political and historical experience, and a common language. The interests of its members extend to all continents.

Commonwealth members (with the year when membership was proclaimed in parentheses if post-1931) are as follows: Australia; Britain; Canada; New Zealand; The Bahamas (1973); Bangladesh (1972); Barbados (1966); Botswana (1966); Cyprus (1961); Fiji (1970); Gambia (1965); Ghana (1957); Grenada (1974); Guyana (1966); India (1947); Jamaica (1962); Kenya (1963); Lesotho (1966); Malawi (1964); Malaysia (1963) — when Singapore, Sarawak and Sabah joined the Federation in 1963, Malaya became Malaysia; Malta (1964); Mauritius (1968); Nauru (Special Member); Nigeria (1960); Sierra Leone (1961); Singapore (1965) — Singapore separated from Malaysia in 1965; Sri Lanka (Ceylon) (1948); Swaziland (1968); Tanzania (1964) — in 1964 Tanganyika and Zanzibar joined to form the

United Republic of Tanzania; Tonga (1970); Trinidad and Tobago (1962); Uganda (1962); Western Samoa (1970); Zambia (1964). Papua New Guinea and the Seychelles will also become members of the Commonwealth after they attain independence. Nauru has special membership in the Commonwealth which entitles it to all the advantages of membership except attendance at Heads of Government meetings. Through their association with Britain, which has retained responsibility for foreign affairs and defence, the five Eastern Caribbean Associated States of Antigua, Dominica, St. Kitts-Nevis-Anguilla, St. Lucia and St. Vincent are also associated with the Commonwealth, as are the British dependencies and the external territories of Australia and New Zealand in the Caribbean, the Atlantic and the Pacific.

Membership in the Commonwealth is an important aspect of Canadian foreign policy. Canada has consistently supported its expansion and development as a vigorous and effective association working for international peace and progress. Canadian objectives have remained constant: to strengthen the association, to encourage more active participation in it by members, and to assist the development of the association as a vehicle for practical co-operation. The organization has no binding rules, and decisions are reached through consensus rather than formal vote.

The Commonwealth Secretariat was established in 1965 by Heads of Government and is located in Marlborough House in London. It organizes and services official Commonwealth conferences, facilitates the exchange of information between member countries and collates their views. Canada's assessment to the 1974-75 budget of the Secretariat was 20.46% of the total, or approximately \$586,000. In 1973 Canada contributed approximately \$4.75 million to various Commonwealth institutions and programs, with particular emphasis on the Commonwealth Fund for Technical Co-operation, the Commonwealth Youth Program and the Commonwealth Foundation.

The most important duty of the Secretariat is the organization of Commonwealth Heads of Government meetings. The last meeting was held in Kingston, Jamaica in April-May 1975; the next will be held in London in mid-1977. Major Commonwealth conferences held in 1975 included the Commonwealth Finance Ministers Meeting in Guyana, the Ministerial Meeting in London on Food Production and Rural Development, the Commonwealth Law Ministers Meeting in Nigeria, and the Commonwealth Experts Group, which met in Ottawa to draft recommendations to governments on the New Economic Order.

3.6.2.2 Canada and the French-speaking community

The federal government is anxious to demonstrate the different aspects of Canadian society, especially Canadian bilingualism, internationally, and fosters the broadening and strengthening of ties with francophone countries. In the last few years traditional relations with the French-speaking countries of Europe have been considerably expanded and diversified, particularly in the scientific and technological fields. These relations have been complemented by the establishment of ties with the French-speaking countries of the Third World. In addition to development aid, which remains the principal contact, there has been a gradual growth of cultural and economic exchange and scientific and technical programs.

Canada also plays an important role within multilateral organizations such as the Agency for Cultural and Technical Co-operation, of which it is a founding member. The First International Francophone Youth Festival, sponsored by the Agency in conjunction with the Quebec government, was held in Quebec City in August 1974. Canada is also a member of the Conference of Ministers of Education and the Conference of Youth and Sports Ministers of francophone countries; their annual meeting was held in May 1975 in Paris. Canada also takes part in the Conference of Ministers of Youth and Sports of French-speaking countries, established after the 1974 annual meeting.

The federal government is not alone in its efforts to draw francophone countries closer. On the bilateral level, the provinces are invited to take part in the work of joint commissions and in the implementation of Canadian government aid programs. On the multilateral level, New Brunswick, Ontario, Manitoba and Quebec participate in some of the Agency's activities and the federal government and the Quebec government have agreed on an arrangement under which the latter has a more distinct status within the Agency's institutions, activities and programs.

There are also various private French-language associations that work to develop relations between their members around the world. The establishment of the Agency has stimulated

their activities and has led to the creation of a number of new organizations. The Canadian government supports several that are either Canadian or have significant Canadian participation.

3.6.2.3 Canada and the United Nations

Since the inception of the United Nations firm support for the UN system has been an integral part of Canadian foreign policy. Canada has played a significant role in General Assembly matters and is a member of a number of subsidiary or ad hoc bodies of the General Assembly including the Special Committee on Peacekeeping Operations, the Conference of the Committee on Disarmament, the Committee on the Peaceful Uses of the Sea-Bed and Ocean Floor Beyond the Limits of National Jurisdiction, the Committee on the Peaceful Uses of Outer Space, the United Nations Scientific Committee on the Effects of Atomic Radiation, the Committee on Contributions, the Committee on Conferences, the United Nations Scientific Advisory Committee and the Board of Auditors.

On the 12 occasions that UN troops have been dispatched to deal with threats to peace and security, Canada has supplied both personnel and equipment. In 1975 perhaps the most noteworthy example of Canadian participation has been the Canadian contribution to the United Nations Force in Cyprus which has sought to help stabilize conditions on Cyprus since 1964 and was instrumental in efforts to resolve the crisis that arose in the summer of 1974.

Since the inception of UNEF I (the first United Nations Emergency Force in the Middle East 1956-67) Canada's contribution to peacekeeping in the Middle East has also been of great significance. Both UNEF II and UNDOF (the United Nations Disengagement Observer Force created following the October 1973 hostilities to the UN buffer zone between Syria and Israel) are recent UN peacekeeping operations in which Canada actively participates.

In 1974 Canada contributed over \$10 million to UN peacekeeping, not including regular costs. Canada agreed to absorb, for example, the cost of salaries, clothing and equipment needed to maintain Canadian contingents. At the same time, Canada actively sought equitable cost-sharing arrangements for peacekeeping ventures. This problem was resolved for UNEF II by the ad hoc imposition of a scale of assessments that places the greatest cost burden on the five permanent members of the Security Council and in decreasing proportion on the economically developed and economically less-developed member states. Under this scale of assessments Canada's share of the estimated UNEF II budget for 1974-75 was approximately \$2.8 million.

Canada is also an active member of all 13 of the United Nations specialized agencies and is the host country to the International Civil Aviation Organization which has its headquarters in Montreal. Canada maintains permanent Missions in both New York and Geneva.

The numerous conferences sponsored by the UN such as the Law of the Sea Conferences have provided UN forums for active participation through which Canada has made contributions to the international community. In 1975 besides the Law of the Sea Conference Canada participated in the International Women's Year Conference, the World Food Conference and the World Population Conference. Canada also looks forward to hosting Habitat: The United Nations Conference on Human Settlements, in the spring of 1976.

Canada is the eighth largest contributor to the UN budget. The assessment charged to Canada is 3.18% of the over-all UN budget and in the UN financial year 1975 amounted to over \$58 million (Table 3.7). Canada makes voluntary contributions to special UN programs such as the United Nations Development Program, the United Nations Commissioner for Refugees, the United Nations Children's Fund, the United Nations Relief and Works Agency in the Middle East, the World Food Programme, the United Nations Institute for Training and Research, the United Nations Education and Training Plan for Southern Africa, the United Nations Fund for Population Activities, the Committee on Racial Discrimination, the Trust Fund for South Africa and the Fund for Drug Control.

Specialized agencies. Canada is a member of each of the 13 specialized agencies of the UN, as well as of the autonomous International Atomic Energy Agency (IAEA). Invested with wide international responsibilities established by intergovernmental agreement, these agencies assist in carrying out the terms of the UN Charter. The Administrative Committee on Co-ordination, established by the Economic and Social Council and composed of the Secretary General of the UN, executive heads of the specialized agencies, the director-general of the

IAEA and other senior officials of the UN, considers common administrative questions, inter-agency program co-ordination and projects or problems of special urgency to be undertaken jointly by several agencies.

The International Labour Organization (ILO) was originally established with the League of Nations in 1919 and became a specialized agency of the UN in 1946. It brings together representatives of governments, employers and workers from 124 (1974) member states in an attempt to promote social justice by improving living and working conditions in all parts of the world. The ILO is responsible for a number of technical and training programs under its regular budget. Sessions of the Governing Body as well as numerous technical and expert committees meet frequently during the year and a conference of the full membership is held annually in June in Geneva. Canada has been a member of the ILO from its inception and, as one of the leading industrial states, it has been assigned one of the 10 non-elective seats on the Governing Body.

The Food and Agriculture Organization (FAO), established in 1945, is one of the largest of the specialized agencies, now having 131 members. Raising the nutrition levels and living standards of its member countries and improving production and distribution techniques for food, agriculture, fishery and forest products are two of its objectives. To this end, the FAO Secretariat provides advisory services, collects and publishes agricultural and fisheries statistics, and organizes international conferences and meetings of experts concerned with agricultural, forestry and fisheries problems.

The FAO Council meets twice a year to give direction and policy guidance to the Secretariat; the FAO Conference meets every second year. Its 17th meeting was held in November 1973 at Rome. FAO headquarters is in Rome and regional offices are located in Washington, Bangkok, Rio de Janeiro, Santiago and Cairo. Canada participates in FAO functions and is a member of the Council, the Finance Committee, the Committee on Commodity Problems, the Committee on Fisheries, the Consultative Sub-Committee on Surplus Disposals, the FAO Group on Grains, the North American Forestry Commission and other FAO bodies.

The Joint FAO-WHO Food Standards Programme, controlled by the Codex Alimentarius Commission, was established in November 1961 by a resolution of the FAO Conference. Its statutes were adopted by the 16th World Health Assembly. The Programme is administered by an executive committee of which Canada is a member.

The World Food Programme first began operations on a three-year experimental basis at the beginning of 1963 under the joint auspices of the FAO and the UN. At the end of 1965, it was established on a continuing basis for as long as multilateral aid is forthcoming. It attempts to provide food aid on a multilateral basis for emergency relief and to promote economic and social development, including the feeding of children. The approved target for pledges for 1975-76 is \$440 million, of which \$368 million had been pledged by January 1975. Between January 1963 and the end of 1974, Canada pledged a total of \$132 million to the Programme and was ranked as the second largest supporter of the Programme. As a result, the 1975-76 pledge estimated at \$98.5 million roughly quadruples Canada's pledge over the previous year. Canada is now the Programme's largest contributor.

The World Health Organization (WHO), created in 1948, now has 140 members and two associate members. Functioning through the World Health Assembly, the Executive Board, the Secretariat and six regional committees, WHO acts as a directing and co-ordinating authority on international health matters. The objective of the Organization, as set out in its constitution, is "the attainment by all peoples of the highest possible level of health". To pursue this goal, WHO provides advisory and technical services from its Geneva headquarters to help countries develop and improve their national health services. At the 28th World Health Assembly held in Geneva in May 1975, Canada was elected to the WHO Executive Board for a three-year term.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) was established in 1946 "to contribute to peace and security by promoting collaboration among the nations through education, science and culture in order to further universal respect for justice, for the rule of law, for human rights and fundamental freedoms". Its headquarters is in Paris and total membership is 135 states.

The Organization is made up of three principal organs — the General Conference which is the policy-making body, the Executive Board and the Secretariat. Representatives from member states make up the General Conference which meets every two years to consider applications for membership, to elect the Executive Board and to plan the program and approve the budget for the ensuing two-year period. The 18th Session of the General Conference, held in Paris in 1974, approved a budget of approximately US\$170 million for 1975-76, giving priority to the educational needs of the developing countries and to science activities, particularly the application of science to development; the Canadian assessment rate is 2.91%.

The International Civil Aviation Organization (ICAO), with headquarters in Montreal, was established in 1947 to promote the safe, orderly and economic development of international civil aviation. It has a membership of 129 (1974). ICAO operations are conducted through its Assembly, Council, committees and Secretariat. Canada has been a member of the 30-nation Council, the governing body of ICAO since its inception as a state of chief importance in air transport. The 21st triennial Assembly was held in Montreal in 1974.

The International Telecommunication Union (ITU), founded to oversee application of the International Telegraph Convention of 1865 and the International Radio Telegraph Convention of 1906, is concerned with international co-operation for the improvement and use of telecommunications for the benefit of the general public; it has 146 member countries. The 1973 Plenipotentiary Conference was held in Torremolinos, Spain. Canada is represented on the 36-member Administrative Council, the executive organ of the ITU.

The World Meteorological Organization (WMO), a specialized agency of the UN since 1951, has evolved from the International Meteorological Organization founded in 1878; in 1972 WMO had 136 members. One of its major programs is the "World Weather Watch" for developing an improved world-wide meteorological system and environment. Canada was elected to the Organization's Executive Committee at the seventh WMO Congress in 1975.

The Inter-Governmental Maritime Consultative Organization (IMCO) was established in 1959 to promote international co-operation on technical shipping problems and the adoption of the highest standards of safety and navigation; its membership in 1972 was 73. IMCO exercises bureau functions for International Conventions of Safety of Life at Sea, Prevention of Pollution of the Sea by Oil, and Facilitation of International Maritime Traffic. At the seventh Assembly in 1971, Canada was elected to the Council of IMCO for a two-year term and continues to hold a seat on the Maritime Safety Committee.

The Universal Postal Union (UPU) is one of the oldest and largest of the specialized agencies, having been founded in Berne in 1874 with the principal aim of improving postal services throughout the world and promoting international collaboration. It has 150 members. The Universal Postal Congress meets every five years to review the Universal Postal Convention and its subsidiary instruments. In the interim, UPU activities are carried on by an executive council, a consultative committee on postal studies and an international bureau. Canada was elected to the Executive Council in 1974 during the 17th Congress in Lausanne.

The International Monetary Fund (IMF) was created by the Bretton Woods Conference in 1944 and established in 1945. It is an international organization designed to facilitate the expansion and growth of world trade and payments as a means of raising world standards of living and of fostering economic development. It does so by promoting stability and order with respect to exchange rates, as well as providing financial mechanisms for balance of payment assistance to enable member countries to correct temporary imbalances with a minimum of disturbance to the international monetary system.

The Fund has in its General Account considerable resources of gold and currencies which are derived mainly from the subscriptions of its members. Each member has a quota in the Fund to which its subscription is equivalent. The payment of this subscription is normally in gold and the member's own currency in the proportion of 25% to 75%. Fund members may draw on the Fund's resources by purchasing other members' currencies in exchange for their own currencies. Such drawings may take place under the Fund's normal lending or "tranche policies" including lines of credit or "standby arrangements" as well as through other mechanisms such as compensatory financing of balance of payment deficits arising notably out

of export shortfalls of primary goods, and the financing of buffer stocks aimed at stabilizing prices of certain primary products. In addition in 1974 the Fund established two new arrangements: the Extended Fund Facility under which the Fund may grant special assistance to member countries to help finance their balance of payment deficits resulting from the implementation of medium-term programs to improve their economies; and an Oil Facility to assist member countries in financing deficits arising from increases in the costs of imports of petroleum products. Unlike its normal operations the Oil Facility is financed from loans made to the Fund by countries in surplus, particularly oil-producing countries, and not from the Fund's own resources. In 1974 the Fund borrowed an amount equivalent to nearly 3 billion units in Special Drawing Rights (SDRs), including a loan from Canada of \$300 million. This facility was extended in 1975.

In addition to the facilities of the General Account, Fund members participating in the Special Drawing Account have been able to use, since January 1970, Special Drawing Rights in transactions with the Fund or with other participants as a means of either obtaining other members' currencies or redeeming their own. There were no new allocations of SDRs in 1974 and the total amount has remained at SDR9.3 billion since January 1, 1972, the date of the last allocation. At the present time the SDR is defined as being equal in value to a fixed basket of 16 currencies one of which is the Canadian dollar.

Total assets of the 126-member Fund at the end of 1974 were SDR31 billion. About SDR5.5 billion in additional funds remain available to the Fund under the General Arrangements to Borrow. Fund gold holdings amounted to SDR5.4 billion and other holdings totalled SDR25.6 billion. Total currency and SDR purchases by member countries amounted in 1974 to the equivalent of approximately SDR4.1 billion, the highest figure ever recorded during a calendar year while total repurchases amounted to SDR606 million. The equivalent of approximately SDR2.4 billion was drawn through the Fund's regular facilities. Drawings under the Oil Facility amounted to SDR1.716 billion and the Fund approved stand-by arrangements in a total amount of SDR1.39 billion. The equivalent of SDR107.5 million was obtained under the compensatory financing facility and there was only one drawing of SDR8.8 million under the buffer stock financing facility.

Canada's participation in the International Monetary Fund is authorized under the Bretton Woods Agreement Act of 1945. Our present quota and subscription is SDR1,100 million of which 25% was paid in gold and 75% in Canadian dollars. Fund holdings of Canadian dollars as of April 30, 1975 amounted to the equivalent of SDR796.9 million or 72.5% of our quota and the reserve position of Canada in the Fund amounted to SDR497.4 million of which SDR194.3 million represented loans by Canada to the Oil Facility.

The World Bank Group consisting of the International Bank for Reconstruction and Development (IBRD) or World Bank, the International Finance Corporation and the International Development Association, is by far the largest of the multilateral aid-giving institutions.

The International Bank for Reconstruction and Development (World Bank), like the International Monetary Fund, originated in the Bretton Woods Conference of 1944. Its early loans were made to assist in the postwar reconstruction of Europe but it has played an increasingly important role in providing financial assistance and economic advice to the less-developed countries. It has become the world's largest multilateral source of development finance. By December 31, 1974 the Bank had made loans totalling US\$24,500 million to 94 of its 125 member countries in Central and South Africa, the Caribbean, Oceania, Asia, Africa and Southern Europe.

The resources available to the Bank for use in its lending operations are: that portion of its subscribed capital which is paid in by governments and freely usable (roughly US\$3,082 million); its retained income from operations (US\$1,900 million); and the funds it is able to raise by the sale of bonds to central banks and government agencies and on private capital markets. By selling bonds and loans from its portfolio to other investors, the World Bank augments its capital. As at December 31, 1974, the Bank had outstanding borrowings of US\$10,863 million in various currencies. The World Bank's policy is to keep its lending rates as low as possible while maintaining its ability to borrow. The current lending rate is 8.5%. Maturity periods on loans are usually from 15 to 30 years. In 1974, the Bank's lending level was of the order of US\$3,590.5 million.

Most World Bank loans are made to finance infrastructure projects (roads, rails, ports and electricity generation and transmission) which provide the framework basic to a country's economy but which generally do not attract private investors. Increasingly, however, the Bank has been giving more emphasis to other sectors such as agriculture, rural development, telecommunications, education, water supply and sewage.

Canada's subscription to the World Bank is the equivalent of \$1,022.5 million in current US dollars out of a total for all countries of US\$30,821 million. Only 10% of each subscription is paid in, however, with the balance remaining as a guarantee against which the Bank is able to sell its own bonds in world capital markets. Thus Canada's paid-in subscription is US\$102.2 million. Over the years, the IBRD has placed nine bond issues in the Canadian private sector capital market, totalling \$212 million, of which approximately \$152 million is still outstanding. No issues were marketed in Canada in 1974.

The Bank of Canada purchases portions of the two-year dollar bond issues which the IBRD has been offering for a number of years to central bank and other governmental agencies. Two such issues were offered in 1974 (at interest rates of 6.9% and 9.0%, respectively) with the Bank of Canada purchasing \$25.0 million at the 6.9% rate, and \$8.0 million at the 9.0% rate. Canada now holds \$58 million of the Bank's two year issue bonds.

The International Development Association (IDA) was established as an affiliate of the IBRD in 1960. Its resources come mainly from governments in the form of interest-free advances, enabling it to make loans on very soft terms (0% and 50 years repayment). IDA lends to its member countries whose per capita income is less than \$375 a year; by June 30, 1974, IDA had made loans of US\$1,095 million to 63 of its 114 member countries.

Since IDA cannot borrow from world capital markets, its resources must be replenished by its member countries every several years. The Fourth Replenishment of IDA's resources, which will provide \$4.5 billion over four years, came into effect on January 17, 1975, by which date final notifications to contribute a total of \$3.5 billion had been received from member countries. Canada's share of the Fourth Replenishment will be \$276 million in Canadian dollars, to be paid in over four years. To permit the Association to continue giving development credits in the period between the exhaustion in July 1974 of the Third Replenishment resources available for commitment and the commencement of the Fourth Replenishment, certain donor countries gave IDA permission to make commitments against their first, and in some cases their second, annual instalments of their contributions. Canada provided advance commitment authority against its first two instalments and also paid in its first instalment in advance of the official commencement of the Replenishment.

The International Finance Corporation (IFC) was established in 1956 as an affiliate of the IBRD to assist less-developed member countries to promote the growth of the private sector of their economies. IFC's principal aims are to provide risk capital for productive private enterprises in association with private investors and management; to encourage the development of local capital markets; and to stimulate the international flow of private capital. IFC makes investments in the form of share subscriptions and long-term loans, carries out stand-by and underwriting arrangements and provides financial and technical assistance to privately controlled development finance companies. Of IFC's total subscribed capital of US\$107 million, Canada provided US\$3.6 million. In addition to its subscribed capital, IFC is able to finance its activities through loans from its parent institution, the World Bank. Total investments and underwriting commitments by IFC to December 31, 1974 amounted to US\$1,135.5 million. Commitments made during 1974 were US\$257 million.

The International Atomic Energy Agency (IAEA) was created in 1957 as an autonomous international organization under the aegis of the UN which has empowered it to try to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. At the end of 1974, membership consisted of 105 states. Because Canada has been designated as one of the members most advanced in nuclear technology,

including the production of source materials, a Canadian representative has served on the Board of Governors since the Agency's inception.

Conferences and symposia, dissemination of information and provision of technical assistance are among the methods adopted to carry out the functions of the Agency. With the rapid expansion in the use of nuclear power, much activity is devoted to this field as well as to the use of isotopes in agriculture and medicine. Another significant role relates to the development and application of safeguards to ensure that nuclear materials supplied for peaceful purposes are not diverted to military uses. Under terms of the Treaty for the Non-Proliferation of Nuclear Weapons, each non-nuclear weapons state adhering to the Treaty was to conclude an agreement with the IAEA providing for safeguards on its entire nuclear program. In addition, the Agency also imposes safeguards pursuant to agreements relating to individual nuclear facilities. Agency inspectors have carried out safeguards inspections in Canada and in more than 60 other countries.

3.6.2.4 Canada and the Conference of the Committee on Disarmament

The Canadian government has long stressed international efforts to work for a safer world through arms control and disarmament. Canada is an active member of the Conference of the Committee on Disarmament (CCD), a 35-nation negotiating body. This Committee, of which the United States and the Soviet Union are co-chairmen, represents in microcosm the world-wide concern to stop the arms race. The CCD is currently seeking a comprehensive prohibition of nuclear weapons testing including underground tests, a ban on the research, development, production and stockpiling of chemical weapons and a prohibition of modification of the environment for military purposes.

3.6.2.5 Canada and Mutual Balanced Force Reductions in Central Europe

Canada participated in the Conference on the Mutual Reduction of Forces and Armaments and Associated Measures in Central Europe, which opened officially in Vienna in October 1973.

3.6.2.6 Canada, the North Atlantic Treaty Organization and NORAD

In the Defence White Paper of August 1971 the government "reaffirmed Canada's adherence to the concept of collective security, and announced that Canada would continue to station significant though reduced forces in Europe as part of the NATO integrated force structure. . . . The decision reflected the government's judgment that Canadian security continues to be linked to West Europe and that Europe is still probably the most sensitive point in the East-West balance of power. It is the area from which any conflict, however limited, might most readily escalate into all-out nuclear war engulfing Canadian territory."

The year 1974 marked the 25th anniversary of the signing of the North Atlantic Treaty. Canada hosted the anniversary meeting of NATO Ministers of Foreign Affairs in Ottawa in June. At this meeting Canada and its allies subscribed to the Ottawa Declaration on Atlantic Relations which stated that: "All members of the Alliance agree that the continued presence of Canadian and substantial US forces in Europe play an irreplaceable role in the defence of North America as well as Europe." To fulfil this role, Canada continues to station land and air elements numbering about 5,000 men in the Federal Republic of Germany. In addition Canadian naval units in the North Atlantic remain earmarked for assignment to the NATO Standing Naval Force in the event of an emergency.

Progress toward genuine détente continued in 1974 and 1975, in part through the Conference on Security and Co-operation in Europe (CSCE) in Geneva, and the talks on Mutual and Balanced Force Reductions (MBFR) in Vienna. As a member of NATO, Canada was a full participant at both.

Canada also co-operates with the United States in the defence of the North American sector of the Alliance through participation in the North American Air Defence Command (NORAD), an integrated command system combining air defence units from both countries. The NORAD agreement was renewed in 1975 and extended for a five-year period and takes account of the increased emphasis being placed on peacetime surveillance and control of each country's national airspace. Arrangements are being made which will result in Canadian airspace being controlled from centres located in Canada.

As a forum for allied consultation, NATO is also involved in non-military activities. Canada participates in the Alliance's Science Committee, Economic Committee and the

Committee on the Challenges of Modern Society (environmental policy). The adjunct bodies of NATO, such as the North Atlantic Assembly and the Atlantic Treaty Association, also contribute to the usefulness of the Alliance as a forum for exchanging views.

Membership in NATO aids the development of Canada's political, economic and scientific/technological relations with Europe, which balance those with the United States. The Alliance allows and obliges both Canada and the United States to take an active role in European affairs and exemplifies the interdependence of Europe and the North American continent.

3.6.2.7 Canada and the United States

There is no more important external relationship for Canada than that with the United States. As a result of geography and economic and social patterns, the two countries must frequently meet to discuss various aspects of their respective governmental policies and programs. In addition to informal consultations, there are also several official and technical committees in which Canadian and US officials discuss bilateral matters ranging from economic questions to defence to transboundary environmental matters. For example, the International Joint Commission, an independent agency, was jointly established by the US and Canada to deal with regulation of flows of boundary waters and the abatement of transboundary air and water pollution. Canada and the US have a long history of defence co-operation through the Permanent Joint Board on Defence and through NATO.

In addition to bilateral matters, Canada and the US work together on international questions in a variety of multilateral organizations such as the UN, the OECD, GATT, the IMF and others in which both countries are active members.

Canada and the United States are each other's best customer, and in 1974 two-way trade between the two countries was approximately \$40 billion. Canada sells to the United States about 65% of all exports and buys from the US about 20% of all US exports.

Demographic and economic patterns make for a somewhat asymmetric relationship between Canada and the US that poses a challenge for Canada. In pursuit of Canadian goals, however, it is fundamental to Canadian foreign policy that Canada continue to maintain sound and mutually beneficial relations with the US.

3.6.2.8 Canada and the Commonwealth Caribbean

Canada has long enjoyed close relations with the countries of the Commonwealth Caribbean. The current phase of relations began with the Commonwealth Caribbean-Canada Conference of 1966, followed by a special Canadian Mission to the area in 1970. In April 1975 the Prime Minister visited Trinidad and Tobago, Barbados and Guyana, then went to the Commonwealth Heads of Government Meeting in Kingston, Jamaica.

By the end of 1974 Canadian investment in the region was estimated at over \$600 million. In the same year, Canadian imports from the region totalled \$89.8 million while exports were valued at \$137.0 million. Canadian bilateral development assistance to the Caribbean began in 1958 and has averaged approximately \$20.0 million a year in loans and grants in recent years. It has been concentrated in the sectors of education, air transport, water supply and agriculture. Funds have also been made available on a multilateral basis through various organizations including the United Nations and the Caribbean Development Bank.

More than 3,000 Canadians are permanent residents in the region and over 200,000 visit the islands annually. During 1974, 22,926 West Indians immigrated to Canada. There are Canadian High Commissions in Jamaica, Trinidad and Tobago, Guyana, and Barbados, and these four countries and Grenada maintain High Commissions in Ottawa. There is also a Commissioner for the Eastern Caribbean in Montreal who represents the five West Indies Associated States (Antigua, Dominica, St. Kitts-Nevis-Anguilla, St. Lucia and St. Vincent) and Montserrat.

3.6.2.9 Canada and Latin America

Canada maintains diplomatic, consular, cultural and trade relations with all the Latin American countries through 13 resident missions and dual or multiple accreditation from those missions. Canada is associated with the Inter-American System through a Permanent Observer Mission to the Organization of American States and membership in its main developmental agencies and other bodies.

A large Ministerial Trade Mission visited Mexico in early 1974 prior to the Second Meeting at ministerial level of the Canada-Mexico Committee in Mexico City. In the autumn of the same year a Ministerial Trade Mission went to Brazil following the visit to Canada of a mission of Brazilian business leaders.

In the summer of 1974, the Secretary of State for External Affairs attended the Law of the Sea Conference in Caracas. His meetings with the President and ministers of Venezuela followed by a visit of a Canadian Ministerial Trade Mission in March 1975 laid the basis for increased exchanges with that country, traditionally a supplier of oil to Canada.

The visits to Cuba in 1974 by a Canadian parliamentary group and a trade and economic delegation and, in 1975, by the Minister of Industry, Trade and Commerce at the head of a group of Canadian businessmen and the visit to Canada of the Minister who is President of the National Bank of Cuba reflected the improved relations between the two countries.

Special delegations represented the Canadian government at the inauguration of new heads of state in Argentina, Brazil, Colombia, Costa Rica, Guatemala, Nicaragua and Venezuela and a Canadian Minister attended the 150th Anniversary in Peru of the Battle of Ayacucho which marked the end of Spanish rule on the continent.

In the private sector, the Canadian Association for Latin America (CALA) in co-operation with the Canadian government organized encounters in Ottawa, Toronto, Montreal and Vancouver between Canadian and Latin American industrialists and businessmen.

The number of Canadian tourists in the area has increased greatly and has started to spread from Mexico and Central America southward. There was a growing demand for cultural interchange. More Latin Americans came to settle in Canada and a Seasonal Workers Agreement was signed with Mexico.

In 1974 the Canadian government's bilateral assistance to Latin American countries increased to \$24.5 million including \$2 million disbursed through non-governmental organizations engaged in developmental and humanitarian work. Almost double this amount was earmarked for 1975-76. Aid continued to focus on renewable natural resources, rural community development, public administration and education. Those countries which most need and can most effectively use Canadian technical assistance are receiving a major part of available resources through sustained programs. Other countries in the region are eligible to receive assistance on an ad hoc project-by-project basis.

At the multilateral level Canada continued to contribute to the development of Latin America through membership in the Inter-American Development Bank, the Pan American Health Organization and the Inter-American Institute for Agriculture Sciences, as well as the World Bank, the UN Economic Commission for Latin America and other UN bodies. In addition, it continued to support the integration efforts of the Andean Group (comprising Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela). Canada is a member also of the Pan American Institute of Geography and History, the Inter-American Statistical Institute, the Inter-American Centre for Tax Administrators, the Centre for Latin American Monetary Studies and the Postal Union of the Americas and Spain. In 1975 Canada hosted important meetings of some of the eight inter-American bodies of which it is a member.

3.6.2.10 Canada and Europe, the Middle East, Africa, and the Far East

Canada and Europe. Canada's relations with Western Europe have developed steadily under the impulse of major Canadian interests in the area. These countries have long been major trading partners for Canada and as a result of its growing prosperity and unity, Western Europe is likely to assume even greater importance. This country maintains close bilateral relations with Britain and France in particular, as well as with most other Western European countries, and has resident diplomatic missions in almost all of them. Canada is also, along with a number of Western European countries, an active member of NATO, OECD and wider international associations such as GATT, the Economic Commission for Europe of the United Nations and the European Regional Group of UNESCO. In view of the increasing economic and political importance that the Common Market is assuming for Canada, the Canadian government has been discussing with European Economic Community (EEC) member countries means of strengthening its economic relations through co-operation with the EEC in the field of industrial development. The Prime Minister paid official visits to the leaders of the

nine member states and to the Commission of the European Communities in October 1974, February, March and May 1975.

Canada has a substantial interest in developing better relations with Eastern Europe. Canada and the Eastern European states have in recent years increased trade, scientific and technological co-operation in cultural exchanges. Canada has participated in the Conference on Security and Cooperation in Europe, which opened in Helsinki in July 1973.

A new era in Canadian-Soviet relations, based on a more candid and friendly atmosphere and on the principle of mutual benefit, was opened in 1971 with the Protocol on Consultations, the Agreement on Co-operation in the Industrial Application of Science and Technology, and the General Exchanges Agreement, which provide for regular and long-term co-operation between Canada and the USSR. At the same time, Canada has been pursuing improved and mutually beneficial relations with the other Eastern European countries. At present, Canada has resident diplomatic missions in Moscow, Prague, Warsaw, Belgrade and Budapest and maintains diplomatic relations with Romania and Bulgaria through non-resident ambassadors.

Canada and the Middle East. Canada has consistently attempted to follow a policy of balance and objectivity as between the parties to the Arab-Israeli dispute. Over the years, Canada has supported the efforts of the UN Relief and Works Agency to alleviate the plight of Palestine refugees and has contributed to the maintenance of the cease-fire that followed the war of October 1973 by providing a contingent of 1,100 troops to serve with UN peacekeeping forces.

Many of the major oil-exporting countries of the Middle East have put their increased revenues to use by expanding their developmental projects. In addition, some have sought to employ a part of their surpluses in assisting other countries that lack such valuable resources. These countries are becoming more aware of Canada's potential as a reliable supplier of many of the traditional and sophisticated goods and services they require. In 1974 Canadian exports to the Middle East increased by some 50%. The value of Canada's imports from this region rose by about 250%, owing mainly to the increase in the price of oil.

Canada and Africa. Direct relations were first established with former British colonies in Africa as they became independent members of the Commonwealth. Increasing contacts and diplomatic relations with the newly independent French-speaking African states soon followed as a result of the increasing emphasis the Canadian government placed on French culture in this country as well as the important role played by francophone African countries in their continental affairs. Canada now maintains diplomatic relations with almost all the independent African states and through resident Canadian missions in 15 countries. The development of bilateral diplomatic and commercial relations has been accompanied by a significant and growing program of Canadian aid to Africa. This program directed more than \$113 million in aid to the African continent in 1972-73, \$131 million in 1973-74 and \$208 million in 1974-75.

Canada and the Asian and Pacific Region. For many years Canada has had important links with a number of countries in Asia. During the past decade Canadians have become increasingly aware of their position as a Pacific as well as an Atlantic nation. With the development of modern transportation and communications, the Pacific Ocean has ceased to be a barrier and, because of the expanding interest in Asia and its importance, contacts between Canadians and the peoples of Asia and the Pacific are growing rapidly in number and variety.

Although some of these contacts have developed as a result of historic and traditional ties, as in the case of Australia and New Zealand, many new contacts have been economic in character. Trade has increased and assistance for development has been provided. The importance of Asia as a trading area is evident from the emergence of Japan by 1973 as Canada's second largest bilateral trading partner, immediately behind the US, with two-way trade in 1974 amounting to more than \$3.6 billion. The potential for further trade in the region has also been recognized by trade fairs in the People's Republic of China, by the conclusion of a trade agreement with that country in October 1973 and by agreements on bilateral trading preferences with New Zealand and Australia in 1973. An increasing number of Canadian trade missions, both official and private, also visit the area.

Canada's general policy of diversification of its international relationships is focused on Japan and reflected in the growing number of meetings between Canadian Ministers and

officials and their counterparts in the region. Canada's interest in co-operation and development is promoted through participation in the Colombo Plan, membership in the Asian Development Bank and Canada's official observer status with the UN Economic Commission for Asia and the Pacific and special aid efforts to help alleviate the effects of the energy crisis on countries of the sub-continent. A significant proportion of Canada's total development assistance is provided to the developing countries of the Asian and Pacific Region.

For more than a quarter-century parts of Asia have been a focus of tension and conflict. Canada has participated in various UN efforts to restore or maintain peace in South Asia, Korea and Indonesia. Beginning in 1954, Canada was a member of the International Commissions for Supervision and Control (ICSC) in Cambodia, Laos and Vietnam. This came to an end in Cambodia at the end of 1969 with the adjournment of the Cambodia Commission, and in Vietnam with the adjournment of the Vietnam ICSC in early 1973 followed by Canada's withdrawal, after six months' participation, from the International Commission of Control and Supervision in Vietnam on July 31, 1973. In Laos, it ended for all practical purposes with the withdrawal from Vientiane on June 15, 1974 of the Canadian Delegation to the Laos ICSC which was established by the Geneva agreement of 1962.

Canada and the Asian Development Bank. Canada is a member of the Asian Development Bank, established in 1966 with Articles of Agreement patterned broadly after those of the World Bank and other international financial institutions. The balance of the Bank's subscribed capital stock (as at December 31, 1974) is US(1966)\$2,770.2 million, of which \$932.1 million belongs to the paid-in portion and the balance remains as a callable guarantee against which the Bank may sell its bonds on world capital markets. Asian regional countries, including Japan, Australia and New Zealand, have subscribed US\$2,004.2 million and non-regional countries have subscribed the remaining US\$766 million. Canada has paid US\$20.0 million to cover the paid-in portion of its original subscription of US\$25 million, as well as subsequent subscriptions of \$37.5 million to the Bank's 150% increase in authorized capital stock made in November 1972.

For its ordinary operations which are financed from paid-in equity capital or any resources raised on world capital markets, the Bank follows a pattern similar to that of the World Bank lending at rates of interest sufficient to maintain its own capacity to borrow.

The Bank has recently established an Asian Development Fund which provides development assistance to developing member countries on concessional terms. Canada's contribution to the new Fund was US\$10 million.

3.6.2.11 Canada and the OECD

The Organization for Economic Co-operation and Development (OECD) was established in Paris in September 1961, as successor to the Organization for European Economic Co-operation (OEEC) founded in 1948 by the countries of Western Europe to facilitate reconstruction of their war-shattered economies. With the OECD's establishment, Canada and the United States and later Japan (May 1964), Australia (June 1971) and New Zealand (May 1973) joined with the countries of Western Europe to form what is today a major, intergovernmental forum for consultation and co-operation among the advanced industrialized nations in virtually every major field of economic activity. At present 24 countries are full members of the Organization, while Yugoslavia has a special status entitling it to participate in certain activities.

The aim of the OECD is to facilitate the formulation of policy approaches which are conducive to balanced economic growth and social progress of both member and non-member countries. The Organization provides an instrument for assembling and examining knowledge relevant to policy-making and also a forum, meeting the year round, for the exchange and analysis of ideas and experiences from all member countries.

The Organization plays a significant role in harmonizing international economic and financial policy and is the main area where industrialized nations may hold consultations on questions of development assistance. The original focus of the OECD on more traditional economic, trade and development matters has altered and new activities have been undertaken in the areas of agriculture, the environment, industry, science and technology, foreign investment and manpower policy. This broader orientation places increasing emphasis

on the qualitative, as well as the quantitative, aspects of economic growth and is most recently seen in the Organization's work on the problems of environment and welfare in the context of economic policy. At the first Ministerial Council in 1961, member countries approved a growth target of 50% for the decade to 1970; that goal was considerably exceeded.

The OECD brings together government officials, representatives of private business, labour unions, universities and other non-governmental bodies in both deliberative and consultative capacities, at the international level. Within Canada, the Canadian Business and Industry Advisory Committee, comprising representatives of the Canadian Chamber of Commerce, the Canadian Council of the International Chamber of Commerce and the Canadian Manufacturers' Association was established in 1962 to ensure input from the business community. Arrangements also exist for consultation with Canadian labour organizations, universities and other non-governmental bodies. Representatives of provincial governments frequently attend OECD meetings when subjects of particular interest to the provinces are being discussed.

3.6.2.12 Canadian development assistance programs

The Canadian International Development Agency (CIDA) is responsible for the operation and administration of Canada's international development assistance programs. In 1974-75 Canada allocated \$732.8 million for foreign aid, an increase of \$146.4 million over the previous year. Of that amount \$193.5 million was allocated to multilateral assistance programs and \$493.6 million to bilateral assistance programs. The remaining funds were divided among non-governmental organizations working in the field of international development, international emergency relief programs, the International Development Research Centre, incentives to Canadian private investment in developing countries and the CIDA scholarship fund for Canadians taking postgraduate degrees in international development and related fields.

CIDA's multilateral assistance programs are directed toward the United Nations and its affiliated organizations, the World Bank Group, the regional development banks and several regional institutions. Among the many UN organizations which Canada supported in 1974 were the United Nations Development Program (UNDP) and the World Food Programme (WFP). During 1974 Canada gave \$22.2 million to the UNDP, the world's largest pre-investment and technical assistance organization. The UNDP has an estimated program budget of \$300 million. The WFP has had 623 projects in 92 countries at a total cost of nearly \$1.525 billion since its inception in 1963. In 1974 Canada contributed \$20.5 million to the Programme in cash and commodities.

As its sixth largest contributor, Canada has continued to play an important role in the World Bank Group, consisting of the International Bank for Reconstruction and Development, the International Development Association (IDA) and the International Finance Corporation. Negotiations for a fourth replenishment of funds for IDA, the agency responsible for the Bank's lending program to under-developed countries, were completed in 1973 and in 1974 Canada paid the first of four instalments which will total \$276 million.

Canada also continued its support for the four regional development banks — the Asian Development Bank, the Caribbean Development Bank, the African Development Bank and the Inter-American Development Bank — during 1974.

CIDA's bilateral development program is divided into three types of aid — technical assistance, economic assistance and international food aid — and into five regional programs. During 1974, 2,107 students and trainees from developing countries studied in Canada under CIDA's technical assistance program and 1,325 Canadian advisers and educators worked overseas. Under a unique feature of Canada's technical training program 599 students and trainees studied in developing countries other than their own.

Canadian bilateral economic assistance is divided almost evenly between grants and loans. Most loans are extended for 50 years and are interest free, with no repayment required for the first 10 years.

The initial allocation for bilateral food programs was \$81 million in 1974-75; but because of the serious drought in Africa and the Indian sub-continent, bilateral disbursements of food aid will be double that amount.

Canada's role in the Colombo Plan, a program initiated by Commonwealth governments in 1951 (and subsequently joined by other governments) to administer aid to South and

Southeast Asia, is the largest and oldest of the regional bilateral aid programs administered by CIDA. It was allocated \$160 million in 1973-74 and \$244 million in 1974-75. However, because of the size of the Asian population it has much less impact than aid from Canada has in such areas as the Caribbean or parts of Africa.

Since 1951 Canada has provided more than \$2 billion in bilateral aid, most of it directed to Bangladesh, India, Indonesia, Pakistan and Sri Lanka. In recent years Canada's program in this area has changed considerably. Capital assistance, in the form of loans and grants, is now provided for specific economic sectors given priority by the recipient countries in fields such as communications, transportation, electric power development, agriculture, fisheries, mining, lumbering, medicine and public health.

CIDA's programs in francophone Africa, which includes the eight least developed nations of the world, were initially concentrated on technical assistance projects particularly in education and health. Since 1970, however, Canada has broadened the scope of its assistance and increased its support in the area from \$29.7 million to \$106.0 million in 1974-75. Canada has become increasingly involved in the economic development of the region through projects that combine capital and technical assistance, and which accord with the priorities of the countries concerned.

The Special Commonwealth Africa Assistance Plan resulted from discussions at the 1960 Commonwealth Prime Ministers' meeting. Canadian assistance to Commonwealth Africa has grown from an initial provision for technical and educational assistance to include a variety of capital projects and pre-investment surveys. Undertakings in the fields of energy, transportation, communications, agriculture and economic planning in eastern and southern Africa have balanced an original focus on west Africa. Between 1960 and March 1974, Canada contributed \$364 million to bilateral development programs in the region. In 1974-75 the allocation for Commonwealth Africa was \$97.5 million, for projects ranging from mining to beekeeping.

Canadian economic and technical assistance to the Commonwealth Caribbean began in 1958. Since then the region has received more Canadian aid per capita than any other area of the world. Canada's bilateral allocations, amounting to more than \$183 million since 1964 including \$24.0 million in 1974-75, have contributed to construction projects, transportation surveys, water systems, medical assistance, support for the University of the West Indies and other projects.

In 1971 CIDA began a bilateral technical assistance program concentrating on agriculture, forestry, fisheries, education and community development. In 1974-75 a bilateral loan program was introduced; disbursements in Latin America are expected to be \$20.0 million.

CIDA is also involved with non-governmental aid organizations and business and industry. In the 1968-69 fiscal year \$5 million was allocated to help voluntary agencies increase their contribution to international development. This figure had risen to \$26 million by 1974-75. It has been estimated that the total value of private assistance to developing nations from Canadian organizations is about \$50 million annually.

CIDA has become involved in the private sector of developing countries' economies and expanding suitable Canadian enterprises overseas. The organization works with Canadian business, the Department of Industry, Trade and Commerce, international finance corporations, development banks, and overseas corporations to identify and help finance worthwhile investment opportunities in all types of secondary industry in the developing world.

The Commonwealth Scholarship and Fellowship Plan was established in 1958 to give promising Commonwealth students the opportunity to study in other member countries. Britain provides half of the annual scholarships and Canada one quarter. Since 1969 the Association of Universities and Colleges of Canada has administered the Plan and CIDA has provided the funds. In January 1975, 263 students were on scholarships and expenditures were about \$1.9 million.

In 1965 Canada introduced research and visiting fellowships as part of the Canadian contribution to the Plan. Professors from other Commonwealth countries are invited to visit Canadian universities and educational institutions to carry out research in their field.

Commonwealth Fund for Technical Cooperation. Established in April 1971 following a Commonwealth Prime Ministers' Conference and administered by the Commonwealth

Secretariat, the Commonwealth Fund for Technical Cooperation provides Commonwealth countries with multilateral assistance in the form of advisory services in economic planning and related fields. Canadian contributions to the Fund reached \$3.44 million in 1974-75.

The International Development Research Centre is an international organization supported financially by Canada. Established in 1970 to initiate and encourage research focused on the problems of the world's developing regions, it fosters co-operation between the developed and the developing world. In its role as co-ordinator of international development research, the Centre enlists the talents of natural and social scientists and technologists from Canada and other countries. It also assists developing regions to build up the research capabilities, innovative skills and institutions required to solve their own problems. The Centre also offers research awards for PhD thesis candidates, young academics and mid-career professionals who are Canadian citizens or landed immigrants with three years residence.

Operations of the Centre are conducted under five program divisions: Agriculture, Food and Nutrition Sciences; Information Sciences; Population and Health Sciences; Social Sciences and Human Resources; and Publications. As at December 31, 1974 the Centre had approved 242 projects worth \$46.6 million involving 180 grantees in 65 countries. Most of the research activities and related seminars were conducted in developing countries by their research organizations.

The Canadian government gave the Centre \$8 million in 1972-73, \$14 million in 1973-74 and \$19 million in 1974-75.

3.7 Defence

3.7.1 The Department of National Defence

The Department of National Defence was created by the National Defence Act, 1922, which established one civil department of government in place of the previous Departments of Militia and Defence, Naval Service and the Air Board. The Department now operates under authority of RSC 1970, c.N-4.

The Minister of National Defence has the control and management of the Canadian Forces, the Defence Research Board and all matters relating to national defence establishments. He is responsible for presenting to Cabinet matters of major defence policy for which Cabinet direction is required. He is also responsible for the National Emergency Planning Establishment which replaced the Emergency Measures Organization on April 1, 1974. The Minister continues to be responsible for certain civil emergency powers, duties and functions as outlined in Order in Council PC 1965-1041 dated June 8, 1965, as amended.

The Deputy Minister is the senior public servant in the Department and the principal civilian adviser to the Minister on all Departmental affairs. He is responsible for ensuring that all policy direction from the government is reflected in the administration of the Department and in military plans and operations.

The Chief of the Defence Staff is the senior military adviser to the Minister and is charged with the control and administration of the Canadian Forces. He is responsible for the effective conduct of military operations and the readiness of the Canadian Forces to meet the commitments assigned to the Department by the government.

The Defence Research Board is responsible for advising the Minister of National Defence on scientific matters relating to defence and for evaluating the contribution of science and technology to defence.

Within National Defence Headquarters, the Deputy Minister and the Chief of the Defence Staff have reporting to them the Vice Chief of the Defence Staff, four assistant deputy ministers and the Judge Advocate General, Director General Information and Director General Departmental Administrative Services.

The Vice Chief of the Defence Staff is the principal assistant and adviser to the Deputy Minister and the Chief of the Defence Staff. He acts for the Chief of the Defence Staff in his absence. The Deputy Chief of the Defence Staff is responsible to the Vice Chief of the Defence Staff for the effective and efficient performance of the operations of the Canadian Forces.

The Defence Council meets as required to provide a channel of communication between the Minister and the senior officials of the Department through briefings, the exchange of

views on policy matters, and discussions of specific matters requiring the approval, decision and/or direction of the Minister.

The Defence Management Committee considers all major and significant matters of policy, plans, programs and administration requiring the decision and direction of the Deputy Minister and/or the Chief of the Defence Staff prior to their submission to the Minister as required.

The Minister of National Defence is responsible for administering the following laws which relate to the Department of National Defence: National Defence Act (RSC 1970, c.N-4), Defence Services Pension Continuation Act (RSC 1970, c.D-3), Canadian Forces Superannuation Act (RSC 1970, c.C-9) and Visiting Forces Act (RSC 1970, c.V-6).

Liaison in other countries. The Chief of the Defence Staff, who is the Canadian Military Representative to the North Atlantic Treaty Organization, is responsible for advice on all NATO military matters and acts as a military adviser to the government and to Canadian delegations to NATO. For purposes of liaison and international co-operation in defence, Canada also maintains: the Canadian Defence Liaison Staff London, representing the Canadian Armed Forces and the Defence Research Board in Britain, the Commander of which is the principal military adviser to the Canadian High Commission in London; the Canadian Defence Liaison Staff Washington, representing the Canadian Armed Forces and the Defence Research Board in the United States, the Commander of which is the principal military adviser to the Canadian Ambassador in Washington, and is the Canadian National Liaison Representative to the Supreme Commander, Allied Command Atlantic (SACLANT) Headquarters; two logistic liaison units also located in the United States; in Brussels, a Canadian member of the NATO Military Committee in Permanent Session, a Military Adviser to the Canadian Permanent Representative to the North Atlantic Council and also a Canadian National Military Representative to Supreme Headquarters Allied Powers Europe (SHAPE); and Canadian Forces Attachés in various countries throughout the world. In addition, a number of defence matters of concern to both Canada and the United States are considered by the Permanent Joint Board on Defence, which provides advice on such matters to the respective governments.

3.7.2 The command structure of the Canadian Forces

The Canadian Forces are organized on a functional basis to reflect the major commitments assigned by the government. All forces devoted to a primary mission are grouped under a single commander who is assigned sufficient resources to discharge his responsibilities. Specifically, the Canadian Forces are formed into National Defence Headquarters and seven major Commands reporting to the Chief of the Defence Staff.

Mobile Command. The role of Mobile Command is: to provide military units, including tactical air support, suitably trained and equipped, for the protection of Canadian territory; to maintain operational readiness of combat formations in Canada required for overseas commitments; and to support United Nations or other peacekeeping operations.

The forces assigned include: three airportable combat groups in Canada; the Canadian Airborne Regiment; the Canadian Contingent of the United Nations Force in Cyprus; Canadian Contingent of the United Nations Middle East; two tactical fighter squadrons; four tactical helicopter squadrons and one helicopter operational training squadron; one transport helicopter squadron; and one combat training centre.

The Militia and Air Reserve components are also controlled and administered by Mobile Command.

The Militia. The Militia is assigned its traditional role as a sub-component in support of the Regular Force. Under the present organization, units of the Militia have been placed under either the Commander, Mobile Command or Canadian Forces Communication Command.

Mobile Command exercises command and control of 121 Militia combat and service units through five Militia Area Headquarters and 21 Militia Districts in the following centres: Esquimalt, Vancouver and Victoria; Edmonton, Southern Alberta, Saskatchewan and Winnipeg; Hamilton, London, North Bay, Ottawa, Toronto and Windsor; Montreal and Quebec; and West Nova Scotia, Cape Breton, West New Brunswick, East New Brunswick, Prince Edward Island and Newfoundland. Mobile Command Militia is charged with: providing trained individuals for augmentation and reinforcement of the Regular Force; providing

trained sub-units to support the field force for the defence of Canada and the maintenance of internal security; providing trained personnel for the augmentation of the civil emergency operations organization; and forming the base on which the Regular Force could be expanded in the event of an emergency.

The 12 Canadian Forces Communication Command Militia Units are commanded and controlled through the five Regular Force Communication Groups and are centred in: Vancouver, Edmonton and Calgary; Regina and Winnipeg; Toronto and Ottawa; Montreal and Quebec; and Saint John, Halifax and Charlottetown. Their tasks collectively include: the augmentation of Canadian Forces Communication Command in an emergency; the provision of communications support to Mobile Command Militia in emergency operations (peace); the provision of instructors for the training of Mobile Command unit signalers; and the provision of communications support for control of Mobile Command Militia tactical exercises.

Air Reserves. The Air Reserve is organized into four Air Reserve Wing Headquarters at Montreal, Toronto, Winnipeg and Edmonton and six flying squadrons of six DHC Otter aircraft each. Air Reserve Squadrons are located at Montreal (two), Toronto (two), Winnipeg (one) and Edmonton (one). The Air Reserve is required to provide light tactical air transport support to the Regular Force and in particular to Mobile Command ground forces. Air Reserve tasks include logistic airlift, air evacuation of patients, aerial surveillance and photography, and communications and liaison.

Maritime Command. All Canadian Maritime Forces, both sea and air, are under the command of the Commander, Maritime Command whose Headquarters is in Halifax. The Deputy Commander is the Commander, Maritime Forces Pacific with Headquarters in Esquimalt. The role of Maritime Command is to defend Canadian interests from assault by sea and to support measures to protect Canadian sovereignty. Support is provided to NATO by assisting in conducting anti-submarine warfare in the Allied Command, Atlantic. The Commander, Maritime Command is the NATO Commander of the Canadian Atlantic Sub-Area of the Western Atlantic Command, under the Supreme Commander, Allied Command Atlantic (SACLANT). Additional roles are to support Canadian military operations as required and to conduct search and rescue operations within the Atlantic and Pacific Search and Rescue Areas (roughly the Atlantic provinces and British Columbia).

As at December 1973, the following vessels were in service in Maritime Command: 20 Destroyer Escorts/Destroyer Escorts Helicopter Equipped including four new Iroquois Class Helicopter Destroyers; three Operational Support Ships; three Oberon Class Submarines; one Trench Class Submarine; six Bay Class Coastal Patrol Vessels (employed as training vessels); and two Escort Repair Vessels (retained in service as alongside workshops and temporary accommodation vessels).

The Naval Reserve is an essential component of Maritime Command and has been designated a ready reserve. Its primary function is to provide trained personnel to augment the fleet in emergencies. Another essential role is to provide and maintain naval control of shipping and protection of fishing vessels capability in time of emergency or war to meet national and NATO requirements. There are 16 naval reserve units in major Canadian cities.

Air Defence Command participates with the United States in the air defence of North America, through NORAD. It has command of three interceptor squadrons, one SAGE control centre, one BUIC centre and two transcontinental radar lines. Operational control of NORAD assigned forces is exercised by HQ NORAD.

Air Transport Command. The main role of Air Transport Command (ATC) is to maintain an operationally effective air transport force to meet Canada's defence commitments. In addition to this main role, ATC is responsible for functional and administrative control of all primary search and rescue (SAR) units in Canada as well as the operational control of SAR activities in the Eastern Search and Rescue Area. It has four squadrons operating medium- and long-range cargo and troop carrying aircraft as well as four transport and rescue squadrons.

Air Transport Command provides the airlift needed to meet national and international emergencies that require military participation. It also provides search and rescue services for aircraft to meet Canada's obligations under the terms of membership in the International Civil

Aviation Organization, and it co-ordinates marine search and rescue operations within Canada's areas of responsibility.

In 1973 strategic and tactical airlift by Command aircraft enabled other elements of the forces to participate in a wide range of national and international responsibilities embracing national sovereignty and development, North American defence, NATO, humanitarian missions and contributions to world peace and security.

About half of the Command's flying is devoted to joint exercises with Mobile Command and other Canadian Forces Commands, often in conjunction with NATO allies. The remainder is used to support Canadian Forces Europe, isolated bases in northern Canada, Canadian military and civil missions abroad, and DND and other government agencies in Canada. These operations and exercises provide the experience the Command needs to maintain readiness for its emergency tasks. During 1973, a total of 408.4 million passenger-miles and 59.4 million cargo ton-miles were flown.

Training Command plans and conducts all recruit and individual trades and classification training that is common to more than one command. The Command is also responsible for the Prairie Region, one of the six military regions into which Canada is divided. The Command Headquarters is in Winnipeg and the nine bases within the Command are located in seven provinces. A total of 24,239 students attended one or more of 1,258 courses conducted by the Command during 1973.

The Canadian Forces Communication Command (CFCC) manages, operates and maintains strategic communications for the Canadian Forces and, in emergencies, for the federal and provincial governments. The Command also provides points for interconnecting strategic and tactical networks. CFCC manages, operates and maintains the major DND automatic data processing centres.

Canadian Forces Europe. The Canadian Forces allocated to support NATO in Europe consist of land and air elements. The land element is No. 4 Canadian Mechanized Brigade Group operationally responsible to the Central Army Group. The air element, No. 1 Canadian Air Group, consisting of three CF-104 Starfighter squadrons, is operationally assigned to No. 4 Allied Tactical Air Force. These elements are located in the Baden-Baden area of the Federal Republic of Germany and are supported administratively by CFB Europe at Lahr.

Administration of military bases in Canada. Staffs and services required below Command Headquarters level to administer and support units based in a particular locality have been organized on Canadian Forces bases. The primary role of each base is to provide base-level administration and supporting services to those units located on or near the base. Each base has been allocated to a functional Commander, to whom the base Commander reports.

Function/regional organization. Functional Commanders have been assigned a regional as well as a functional responsibility for such actions as representation to provincial governments, aid of the Civil Power, emergency and survival operations, and administration of cadets, as well as regional support services for all units in the region.

Canada has been divided into six regions, five of which have been assigned to functional Commanders as follows: Atlantic (Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick) — Maritime Command; Eastern (Quebec) — Mobile Command; Central (Ontario) — Air Transport Command; Prairie (Manitoba, Saskatchewan, Alberta) — Training Command; and Pacific (British Columbia) — Maritime Forces Pacific. One region, comprising the Yukon Territory and Northwest Territories, has been assigned to Commander Northern Region with Headquarters in Yellowknife, NWT who also exercises a co-ordinating function for all military activities in the region.

3.7.3 Operations in 1973-74

Maritime air, surface and sub-surface forces participated in NATO exercises in the North Atlantic and in combined exercises with forces from New Zealand, Australia, Britain and the United States on both the Pacific and Atlantic coasts. Training exercises were conducted in the Bermuda, Caribbean and Southern California areas to maintain the Maritime Forces at an operational level. In addition, an exercise was held in the Arctic to assess capabilities in northern waters. One destroyer was assigned to the NATO Standing Naval Force Atlantic.

Argus aircraft from both east and west coast squadrons maintained daily long-range patrols and surveillance of ocean areas adjacent to the Canadian coastline and in the Arctic; many hours were also flown on search and rescue missions. Shore-based Tracker aircraft flew similar missions, concentrating on coastal patrols, fisheries protection and pollution prevention. Between exercises, ships made goodwill visits to many nations. Argus crews conducted exchange visits with United States, Britain and France.

In fulfilment of obligations under NATO, Canada continued to provide ground and air forces for the defence of Western Europe.

To exercise Canadian sovereignty and to familiarize troops with the problems of living, moving and fighting in the North, exercise New Viking continued to be Mobile Command's most important northern exercise. From advanced bases in Churchill and Resolute Bay forces were deployed to forward patrol bases in all parts of the Canadian archipelago.

In addition, the Canadian Airborne Regiment, the Command's quick reaction force for both defence of Canada and international peacekeeping operations, exercised in the Arctic and trained in California in October.

The Canadian Forces continued to provide support for United Nations operations. Canadian participation in the UN forces in Cyprus included provision of a reduced Infantry Battalion, a Canadian Contingent Headquarters and a Canadian element in the UN Headquarters — a total of 589 officers and men. There were also 39 officers and men employed on other UN missions in the Middle East, Kashmir and Korea. In October Canada agreed to contribute forces to the United Nations Emergency Force (Middle East). Between November 4, 1973 and January 15, 1974, over 1,100 men, with communication, supply, and other equipment, were deployed to Egypt. The force includes a Signals Unit, a Service Unit, an Air Unit of two Buffalo Aircraft, a base support unit and personnel on the staff of the United Nations Headquarters in Cairo.

In January 1973 Canada deployed 250 members of the forces to Vietnam to participate in the International Commission for Control and Supervision. The Canadian contribution was dependent upon conditions of effectiveness and control which were not met; accordingly the Canadian contingent was withdrawn in July 1973.

3.7.4 Training

All recruit and most basic and advanced trades training in support of the Canadian Armed Forces takes place at various schools under the supervision of Training Command. Maritime Command and Mobile Command maintain functional control of trades and operational training for their personnel.

The Combat Arms School of the Combat Training Centre, CFB Gagetown, NB, conducts training for officers and men of the armoured artillery and infantry units of the Regular and Reserve Forces, ranging from basic trades to advanced courses. Similar courses for French-speaking personnel are given at the Combat Arms School Detachment, CFB Valcartier, Que. Training for field engineers and construction trades is given at CFB Chilliwack, BC.

Recruit training takes place at CFB Cornwallis, NS, for English-speaking recruits and at CFB Saint-Jean, Que., for French-speaking recruits. Basic technical training in French is given also at CFB Saint-Jean, Que. and an expanding trades-training program in that language is given at most bases and schools.

Saint-Jean is also the site of the English-French Language School, although the official languages are taught on a limited scale at selected Canadian Forces Bases, and in civilian centres under the auspices of the Public Service Commission. Training in other languages is given at the Canadian Forces Foreign Language School in Vanier, Ont.

Support trades training is conducted at the School of Administration and Logistics, CFB Borden, Ont. Electronics training is conducted at the School of Communications and Electronic Engineering at CFB Kingston, Ont., and aerospace training at the School of Aerospace and Ordnance Engineering at CFB Borden. Training for various other technical specialties is conducted at a number of bases across Canada. Two Fleet Schools, one at CFB Esquimalt, BC and the other at CFB Halifax, NS, provide basic and advanced Maritime trades training and have training facilities for the operational warships on the east and west coasts.

Flying training to "wings" standard is based in the Prairie provinces — pilot selection and basic helicopter flying training at Portage la Prairie, Man., basic fixed-wing flying training at

Moose Jaw, Sask., and advanced flying training at CFB Cold Lake, Alta. Air Navigator and Observer training is conducted at the Air Navigation School at CFB Winnipeg, Man. The operational Commands maintain operational flying training units and technical training units to give training on handling equipment to tradesmen and specialist officers in these Commands.

Canadian Military Colleges. The three Canadian Military Colleges are the Royal Military College of Canada, founded at Kingston, Ont., in 1876; Royal Roads Military College, established in 1941 near Victoria, BC; and Collège militaire royal de Saint-Jean, established at Saint-Jean, Que., in 1952, primarily to meet the needs of French-speaking officer cadets. In 1959 the Ontario Legislature granted the Royal Military College a charter empowering it to grant degrees. In 1972 the Department of National Defence concluded an agreement which permits graduates of Collège militaire royal de Saint-Jean to be granted Université de Sherbrooke degrees. In 1967, the Canadian Services Colleges, as they were then known, were re-designated the Canadian Military Colleges.

The role of the Colleges is to educate and train officer cadets and commissioned officers for a career in the Canadian Forces. Courses are designed to develop character and to provide a balanced liberal, scientific and military education leading to degrees in arts, science and engineering. The Royal Military College of Canada accepts senior matriculants and offers a four-year course. Royal Roads Military College accepts senior matriculants who, on successful completion of the second year, go to Collège militaire royal de Saint-Jean or to the Royal Military College of Canada for their third and fourth years. Collège militaire royal de Saint-Jean accepts junior and senior matriculants to pursue a five- or four-year program; the final two years in some disciplines are completed at the Royal Military College.

During the 1973-74 academic year 1,342 full-time students were enrolled at the Canadian Military Colleges, 650 of them at the Royal Military College, 453 at Collège militaire royal de Saint-Jean and 239 at Royal Roads Military College.

Staff and defence courses, Canadian Forces officer professional development system. A new four-level system of professional development courses for officers is being offered.

The Junior Staff Course, given at the Canadian Forces Staff School, Toronto, Ont., is a 10-week course conducted four times a year for junior captains selected from all officer classifications. Its aim is to prepare junior officers to perform staff functions of a general nature that are appropriate to their rank, and to provide the foundation for their subsequent professional development. The course includes studies in staff duties, the communication process, service knowledge, leadership and management, professionalism and current affairs.

The Junior Command and Staff Course (Land) is a 16-week course given twice a year at the Canadian Land Forces Command and Staff College, Kingston, Ont. This course is designed to meet the need for performance-oriented command and staff training for selected junior officers employed in land force operations.

The Command and Staff Course is a 44-week course given at the Canadian Forces Staff College, Toronto, Ont., which is intended to develop selected officers for senior command and staff appointments in the Canadian Armed Forces. In broad terms the curriculum includes military studies, executive development studies, and national and international studies. The student body normally consists of Canadian Forces majors from all classifications and a limited number of foreign officers.

The National Defence College Course, Kingston, Ont., is a 47-week course for senior military officers and civilian officials of government departments and the private sector who are due for appointments to positions of higher responsibility. It enables course members to study together, in the atmosphere of an advanced graduate school, those aspects of national and international affairs which determine or significantly affect Canada's defence and related policies. Lecturers are chosen from leaders in various fields in Canada and other countries. In addition, field study trips in Canada, the United States, Europe, Asia, Africa, Australia and Latin America familiarize students with conditions and influences which affect Canada and other countries.

3.7.5 The cadet movement in Canada

Three civilian agencies sponsor the cadet movement in Canada. The Air Cadet League of Canada, the Army Cadet League and the Navy League of Canada promote the Royal

Canadian Air Cadets, the Royal Canadian Army Cadets and the Royal Canadian Sea Cadet Corps for boys between the ages of 13 and 18. In addition the Navy League has two other organizations, the Navy League Cadets for boys ages 11 to 13 and the Wrenette Corps for girls. The Department of National Defence supports these Leagues in their objectives of developing good citizenship, leadership and physical fitness among the youth of this country. The Department provides a number of summer camps across the country, and sponsors exchange programs between provinces, and with the US, Britain, and several European countries.

Military assistance programs. Canada assists many Commonwealth and non-NATO countries by sending military training teams to those countries or by training a small number of military personnel in Canada. Training teams are sent to countries such as Ghana and Tanzania. Training in Canada is offered to developing countries such as Barbados, Cameroon, Jamaica, Kenya, Malaysia, Nigeria, Singapore and Zambia.

Canada provides training facilities for some NATO countries on a cost-recovery basis according to the provisions of the Visiting Forces and the NATO Status of Forces Agreement. Under the terms of a 10-year agreement signed in 1971 British military forces train in Canada. Training areas remain under Canadian command and control and all costs are paid by Britain.

Pilots from NATO countries have trained at Canadian defence establishments for many years. In recent years pilots from Denmark, Germany, Norway and the Netherlands have benefited from the program. Canada continues to tutor NATO pilots, with the Netherlands participating in a four-year bilateral agreement with Canada at present.

3.7.6 Canada Emergency Measures Organization

The Canada Emergency Measures Organization was brought into being to initiate, stimulate and co-ordinate the civil aspects of defence policy delegated to federal departments and agencies to meet the threat of nuclear war on Canada.

In late 1973, by government direction, certain changes were made at the federal level to ensure a co-ordinated, effective and timely response to any emergency. The Canada Emergency Measures Organization was re-named the National Emergency Planning Establishment effective April 1, 1974. The new organization will work under the direction of the Privy Council Office with its main function to be that of mitigating the effects of disasters in Canada. It will continue to have regional offices in each provincial capital to ensure continuing support for provincial authorities in the development of mutual emergency capabilities and arrangements.

Sources

- 3.1 Clerk of the Privy Council and Secretary to the Cabinet, Privy Council Office; Clerk of the Senate; Office of the Representation Commissioner; House of Commons Division, Department of Supply and Services; Office of the Chief Electoral Officer.
- 3.2.1 Secretary of the Treasury Board.
- 3.2.2 Secretary of the Treasury Board; Public Relations Division, Public Service Commission.
- 3.2.3 Canada Immigration Division, Department of Manpower and Immigration.
- 3.2.4 Citizenship Registration Branch, Department of the Secretary of State.
- 3.2.5 Communications Division, Department of Indian Affairs and Northern Development; North Group, Office of the Public Information Adviser, Department of Indian Affairs and Northern Development.
- 3.2.6 Information Services, Department of Finance; *Canada Year Book* staff.
- 3.3 Supplied by the respective provincial and territorial governments.
- 3.4.1 Privy Council Office.
- 3.4.2 Supplied by the respective provincial governments.
- 3.5 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 3.6.1 Information Division, Department of External Affairs.
- 3.6.2 Information Division, Department of External Affairs; Information Division, Canadian International Development Agency; International Development Research Centre.
- 3.7 Information Division, Department of National Defence.

Tables

..	not available	e	estimate
..	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed		certain tables may not add due to rounding

3.1 Duration and sessions of Parliaments, 1958-74

Order of Parliament	Session	Date of opening	Date of prorogation	Days of session	Sitting days of House of Commons	Date of election, writs returnable, dissolution, and length of Parliament ^{1,2}
24th Parliament	1st	May 12, 1958	Sept. 6, 1958	117	93	Mar. 31, 1958 ^a Apr. 30, 1958 ^a Apr. 19, 1962 ³ 3 yr, 11 m, 20 d
	2nd	Jan. 15, 1959	July 18, 1959	185	127	
	3rd	Jan. 14, 1960	Aug. 10, 1960	210	146	
	4th	Nov. 17, 1960	Sept. 28, 1961	316 ^a	174	
	5th	Jan. 18, 1962	Apr. 18, 1962	91	65	
25th Parliament	1st	Sept. 27, 1962	Feb. 5, 1963 ⁷	131	72	June 18, 1962 ^a July 18, 1962 ⁴ Feb. 6, 1963 ⁵ 6 m, 20 d
26th Parliament	1st	May 16, 1963	Dec. 21, 1963	220 ^a	117	Apr. 8, 1963 ³ May 8, 1963 ⁴ Sept. 8, 1965 ⁵ 2 yr, 4 m, 1 d
	2nd	Feb. 18, 1964	Apr. 3, 1965	411 ⁹	248	
	3rd	Apr. 5, 1965	Sept. 8, 1965 ¹⁰	157 ¹¹	53	
27th Parliament	1st	Jan. 18, 1966	May 8, 1967	476 ¹²	250	Nov. 8, 1965 ³ Dec. 9, 1965 ⁴ Apr. 23, 1968 ⁵ 2 yr, 4 m, 15 d
	2nd	May 8, 1967	Apr. 23, 1968	352 ¹³	155	
28th Parliament	1st	Sept. 12, 1968	Oct. 22, 1969	386 ¹⁴	199 ¹⁵	June 25, 1968 ³ July 25, 1968 ⁴ Sept. 1, 1972 ⁵ 4 yr, 1 m, 8 d
	2nd	Oct. 23, 1969	Oct. 7, 1970	349 ¹⁶	155 ¹⁷	
	3rd	Oct. 8, 1970	Feb. 16, 1972	497 ¹⁸	244	
	4th	Feb. 17, 1972	Sept. 1, 1972	197 ¹⁹	91	
29th Parliament	1st	Jan. 4, 1973	Feb. 26, 1974	418 ²⁰	206	Oct. 30, 1972 ^a Nov. 20, 1972 ^a May 9, 1974 ⁵ 1 yr, 5 m, 20 d
	2nd	Feb. 27, 1974	May 8, 1974	71	50	
30th Parliament	1st	Sept. 30, 1974				July 8, 1974 ^a July 30, 1974 ⁴

¹The ordinary legal limit of duration for each Parliament is five years.

²Duration of Parliament in years, months and days. The life of a Parliament is counted from the date of return of election writs to the date of dissolution, both days inclusive (BNA Act, Sect. 50).

³Date of general election.⁴Writs returnable.⁵Dissolution of Parliament.

⁶Includes long adjournment from July 13 to Sept. 7, 1961.

⁷Government defeated in House of Commons on want of confidence motion.

⁶Includes long adjournment from Aug. 2 to Sept. 30, 1963.

⁹Includes long adjournment from Dec. 18, 1964 to Feb. 16, 1965.

¹⁰House adjourned on June 30 until Sept. 27 but dissolved on Sept. 8, 1965.

¹¹Includes long adjournment from June 30 to Sept. 27, superseded by dissolution on Sept. 8, 1965.

¹²Includes 18-day Christmas adjournment, 11-day Easter adjournment, and two long adjournments from July 14 to Aug. 29 and Sept. 9 to Oct. 5.

¹³Includes adjournment from July 7, 1967 to Sept. 25, 1967; Christmas adjournment from Dec. 21, 1967 to Jan. 22, 1968; and Easter adjournment from Mar. 27, 1968 to Apr. 23, 1968.

¹⁴Includes Christmas adjournment from Dec. 20, 1968 to Jan. 14, 1969; Easter adjournment from Apr. 2, 1969 to Apr. 14, 1969; and summer adjournment from July 25, 1969 to Oct. 22, 1969.

¹⁵Includes two days devoted to committee work.

¹⁸Includes Christmas adjournment from Dec. 19, 1969 to Jan. 12, 1970; Easter adjournment from Mar. 25, 1970 to Apr. 6, 1970; and summer adjournment from June 26, 1970 to Oct. 5, 1970.

¹⁷Includes one day devoted to committee work.

¹Includes Christmas adjournment from Dec. 18, 1970 to Jan. 11, 1971; Easter adjournment from Apr. 7, 1971 to Apr. 19, 1971; adjournment for committee work on May 27, 1971; summer adjournment from June 30, 1971 to Sept. 7, 1971; Christmas adjournment from Dec. 23, 1971 to Dec. 28, 1971, Dec. 31, 1971 to Jan. 12, 1972 and Jan. 12, 1972 to Feb. 16, 1972.

¹⁹Includes Easter adjournment from Mar. 29, 1972 to Apr. 13, 1972; and summer adjournment from July 7, 1972 to Aug. 31, 1972.

⁹⁰Includes Easter adjournment from Apr. 19, 1973 to May 6, 1973; summer adjournment from July 28, 1973 to Aug. 29, 1973 and Sept. 22, 1973 to Oct. 14, 1973; Christmas adjournment from Dec. 22, 1973 to Jan. 2, 1974 and Jan. 15, 1974 to Feb. 25, 1974.

3.2 Representation in the Senate since Confederation, 1867

[illegible]

3.2 Representation in the Senate since Confederation, 1867 (concluded)

Province	1867	1870	1871	1873	1882	1887	1892	1903	1905	1915- 1948	1949- 1974
Western Provinces	...	2	5	5	6	8	9	11	15	24	24
Manitoba	...	2	2	2	3	3	4	4	4	6	6
British Columbia	...	...	3	3	3	3	3	3	3	6	6
Saskatchewan	}	...	...	...	...	2	2	4	{ 4	6	6
Alberta		...	...	...	...	...	...	...		6	6
Total	72	74	77	77	78	80	81	83	87	96	102

3.3 Representation in the House of Commons, as at federal general elections 1867-1974

Province or territory	1867	1872	1874 1878	1882	1887 1891	1896 1900	1904	1908 1911	1917 1921	1925 1926 1930	1935 1940 1945	1949	1953 1957 1958 1962 1963 1965	1968 1972 1974
Ontario	82	88	88	92	92	86	86	82	82	82	82	83	85	88
Quebec	65	65	65	65	65	65	65	65	65	65	65	73	75	74
Nova Scotia	19	21	21	21	21	20	18	18	16	14	12	13	12	11
New Brunswick	15	16	16	16	16	14	13	13	11	11	10	10	10	10
Manitoba	...	4	4	5	5	7	10	10	15	17	17	16	14	13
British Columbia	...	6	6	6	6	6	7	7	13	14	16	18	22	23
Prince Edward Island	...	...	6	6	6	5	4	4	4	4	4	4	4	4
Saskatchewan	}	...	...	...	...	...	...	...	...	...	...	...	...	...
Alberta		...	...	...	4	4	10	{ 7	12	16	21	20	17	13
Yukon Territory	}	...	...	...	...	...	...	...	...	...	...	...	1	1
Mackenzie River		...	...	...	...	...	1	1	1	1	1	1	1	1
NWT ¹}	}	...	...	...	...	...	...	...	...	...	...	...	7	7
Newfoundland		...	...	...	...	...	...	...	...	...	...	...	7	7
Total	181	200	206	211	215	213	214	221	235	245	245	262	265	264

¹Electoral district of Northwest Territories in 1963, 1965, 1968, 1972 and 1974.

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the thirtieth general election, July 8, 1974

Province and electoral district	Popu- lation, Census 1971	Voters on list	Total votes polled (incl. rejec- tions)	Votes polled by member	Name of member	Postal address	Party affili- ation ¹
NEWFOUNDLAND (7 members)							
Bonavista—Trinity— Conception	69,543	44,012	26,839	13,258	D. Rooney	Lower Island Cove	Lib.
Burin—Burgoe	54,044	31,149	16,698	13,550	Hon. D.C. Jamieson	Swift Current	Lib.
Gander—Twillingate	71,480	40,875	23,035	12,721	G.S. Baker	Gander	Lib.
Grand Falls—White Bay—Labrador	75,106	41,250	23,290	12,689	B. Rompkey	Grand Falls	Lib.
Humber—St. George's —St. Barbe	82,263	44,731	28,104	16,500	J. Marshall	Corner Brook	PC
St. John's East	87,477	52,148	30,371	16,941	J.A. McGrath	Portugal Cove	PC
St. John's West	82,191	50,205	27,197	14,550	W. Carter	St. John's	PC
PRINCE EDWARD ISLAND (4 members)							
Cardigan	23,363	15,212	13,043	6,958	Hon. D.J. MacDonald	Bothwell	Lib.
Egmont	30,629	18,583	14,581	7,583	D. MacDonald	Alberton	PC
Hillsborough	35,639	25,322	19,801	9,917	H. Macquarrie	Victoria	PC
Malpeque	22,010	13,952	11,224	5,649	Hon. J.A. MacLean	Belle River	PC
NOVA SCOTIA (11 members)							
Annapolis Valley	74,123	48,463	36,702	19,174	P. Nowlan	Wolfville	PC
Cape Breton—East Richmond	64,371	40,428	31,923	14,192	A. Hogan	Glace Bay	NDP
Cape Breton Highlands— Canso	62,550	41,476	32,406	17,977	Hon. A.J. MacEachen	Inverness	Lib.
Cape Breton— The Sydneys	68,135	43,553	32,682	14,371	R. Muir	Sydney Mines	PC
Central Nova	62,726	42,956	32,532	17,459	E.M. MacKay	Lorne	PC
Cumberland— Colchester North	65,899	46,059	34,388	18,078	R.C. Coates	Amherst	PC
Dartmouth—Halifax East	98,399	61,917	43,030	22,090	M. Forrestall	Dartmouth	PC

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the thirtieth general election, July 8, 1974 (continued)

Province and electoral district	Population, Census 1971	Voters on list	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Postal address	Party affiliation ¹
NOVA SCOTIA (concluded)							
Halifax	64,523	42,970	30,339	14,865	Hon. R.L. Stanfield ^a	Ottawa	PC
Halifax—East Hants	100,637	70,222	50,199	25,563	B. McCleave	Halifax	PC
South Shore	65,420	46,174	33,660	18,206	L.R. Crouse	Lunenburg	PC
South Western Nova	62,177	40,549	30,969	15,067	C. Campbell	Yarmouth	Lib.
NEW BRUNSWICK (10 members)							
Carleton—Charlotte	59,244	38,195	24,541	12,315	F.A. McCain	Florenceville	PC
Fundy—Royal	70,316	48,459	31,594	13,631	G. Fairweather	Rothsay	PC
Gloucester	63,556	39,011	28,598	16,031	H. Breau	Tracadie	Lib.
Madawaska—Victoria	54,772	33,187	22,395	14,310	E. Corbin	Edmundston	Lib.
Moncton	80,188	56,121	45,433	20,671	L. Jones	Moncton	Ind.
Northumberland—Miramichi	54,094	32,320	24,186	12,648	M. Dionne	Millerton	Lib.
Restigouche	52,485	31,208	22,709	12,492	Hon. J.-E. Dubé	Campbellton	Lib.
Saint John—Lancaster	68,460	42,945	28,024	12,860	M. Landers	Saint John	Lib.
Westmorland—Kent	51,856	34,805	26,686	16,340	R.-A. LeBlanc	Memramcook	Lib.
York—Sunbury	79,586	50,267	35,326	17,673	J.R. Howie	Fredericton	PC
QUEBEC (74 members)							
Abitibi	58,427	38,197	22,758	12,425	G. Laprise	LaSarre	SC
Argenteuil—Deux-Montagnes	80,574	54,218	39,071	20,414	F. Fox	St-Eustache	Lib.
Beauce	69,984	46,155	33,221	13,855	Y. Caron	St-Georges-Ouest	Lib.
Beauharnois—Salaberry	73,396	48,313	33,864	16,828	G. Laniel	Valleyfield	Lib.
Bellechasse	64,675	42,225	27,641	12,550	A. Lambert	Berthier-sur-Mer	SC
Berthier	62,521	42,574	29,050	15,266	A. Yanakis	St-Gabriel-de-Brandon	Lib.
Bonaventure—Îles-de-la-Madeleine	55,004	33,376	21,867	12,977	A. Béchard	Carleton	Lib.
Brome—Missisquoi	76,787	51,019	38,680	19,490	H. Graffey	Knowlton	PC
Chamby	120,337	82,787	56,583	30,099	B. Loisele	Beloeil	Lib.
Champlain	62,068	41,017	30,332	14,466	R. Matte	St-Marc-des-Carrières	SC
Charlevoix	59,686	39,016	25,595	10,372	C. Lapointe	Tadoussac	Lib.
Chicoutimi	82,658	51,405	35,405	17,096	P. Langlois	Chicoutimi	Lib.
Compton	62,197	39,068	27,198	11,474	C. Tessier	Lac-Mégantic	Lib.
Drummond	75,533	49,826	38,606	15,561	Y. Pinard	Drummondville	Lib.
Frontenac	67,991	42,338	29,817	14,236	L. Corriveau	Thetford Mines	Lib.
Gaspé	56,280	34,679	21,436	12,213	J.-A. Cyr	Chandler	Lib.
Gatineau	81,320	53,833	33,404	19,513	G. Clermont	Thurso	Lib.
Hull	93,804	61,475	38,837	26,872	G. Isabelle	Lucerne	Lib.
Joliette	83,417	57,126	42,603	21,935	R. LaSalle	Crabtree	PC
Kamouraska	63,228	39,885	23,805	11,664	C.-E. Dionne	St-Pascal	SC
Labelle	82,228	55,680	39,534	16,224	M. Dupras	St-Jérôme	Lib.
Lac-Saint-Jean	56,862	33,618	24,483	11,162	M. Lessard	Alma	Lib.
Langelier	58,559	36,584	22,463	13,616	Hon. J. Marchand	Quebec	Lib.
Lapointe	72,451	44,318	28,634	16,617	G. Marceau	Jonquièrre	Lib.
Laprairie	131,675	89,276	60,419	35,276	I. Watson	Laprairie	Lib.
Lévis	80,037	56,925	38,538	20,348	R. Guay	Lauzon	Lib.
Longueuil	112,703	79,375	50,876	24,500	J. Olivier	Longueuil	Lib.
Lotbinière	70,964	46,948	36,505	21,448	A. Fortin	Victoriaville	SC
Louis-Hébert	106,928	74,430	51,825	32,441	Albanie Morin	Sillery	Lib.
Manicouagan	80,461	57,879	25,945	16,229	G. Blouin	Sept Îles	Lib.
Matane	48,373	29,449	17,133	11,194	P. De Bané	Matane	Lib.
Montmorency	116,204	79,714	54,754	27,082	L. Duclos	Ste-Foy	Lib.
Pontiac	59,956	37,761	23,249	12,642	T. Lefebvre	Davidson	Lib.
Portneuf	116,079	80,495	55,065	25,630	P. Bussièrres	Charlesbourg	Lib.
Québec-Est	81,782	52,449	34,032	19,019	G. Duquet	Quebec	Lib.
Richelieu	77,197	53,200	38,334	20,801	F. Côté	Ste-Brigitte-des-Saults	Lib.
Richmond	62,741	38,576	28,305	11,825	L. Beaudoin	Bromptonville	SC
Rimouski	69,276	44,692	31,515	15,085	E. Allard	Rimouski	SC
Rivière-du-Loup—Témiscouata	59,816	37,302	25,714	11,071	R. Gendron	Rivière-du-Loup	Lib.
Roberval	53,671	33,606	23,464	12,877	C.-A. Gauthier	Mississini	SC
Saint-Hyacinthe	82,540	56,801	43,602	21,453	C. Wagner	Saint-Hyacinthe	PC
Saint-Jean	83,274	54,334	37,571	18,798	W.B. Smith	Hemmingford	Lib.
Saint-Maurice	71,147	47,117	33,009	20,468	Hon. J. Chénien	Shawinigan	Lib.
Shefford	79,083	51,856	38,397	15,572	G. Rondeau	Granby	SC
Sherbrooke	79,550	66,005	44,944	23,903	Irénée Pelletier	Sherbrooke	Lib.
Témiscamingue	54,545	32,226	22,911	14,026	R. Caouette ^a	Rouyn	SC
Terrebonne	122,332	83,020	55,124	28,651	J.-R. Comtois	Repentigny	Lib.
Trois-Rivières	95,389	64,050	42,278	24,335	C.-G. LaJoie	Cap-de-la-Madeleine	Lib.
métropolitain	58,859	38,259	24,695	10,452	A. Caouette	Val-d'Or	SC
Villeuve							
Island of Montreal and Île-Jésus							
Ahuntsic	90,537	56,170	39,547	24,041	Hon. Jeanne Sauvé	Montreal	Lib.
Dollard	123,429	79,270	57,138	37,200	Hon. J.-P. Goyer	St-Laurent	Lib.
Duvernay	112,102	69,264	47,526	25,674	Y. Demers	Ville-de-Laval	Lib.
Gamelin	92,533	57,861	37,993	20,625	A. Portelance	Montreal	Lib.
Hochelaga	65,393	38,884	22,991	10,561	Hon. G. Pelletier	Westmount	Lib.
Lachine—Lakeshore	92,202	57,365	42,591	22,068	R. Blaker	Pointe-Claire	Lib.
Lafontaine	70,166	42,952	25,890	11,429	C.A. Lachance	Montreal	Lib.

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the thirtieth general election, July 8, 1974 (continued)

Province and electoral district	Population, Census 1971	Voters on list	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Postal address	Party affiliation ¹
QUEBEC (concluded)							
LaSalle—Emard—Côte Saint-Paul	116,235	72,724	47,179	28,146	J. Campbell	LaSalle	Lib.
Laurier	67,023	31,634	18,573	10,085	F.-E. Leblanc	Montreal	Lib.
Laval	115,908	71,697	48,729	29,715	M. Roy	Laval-des-Rapides	Lib.
Maisonneuve—Rosemont	74,499	44,444	27,576	13,817	S. Joyal	Montreal	Lib.
Mercier	118,807	74,272	44,505	22,545	P. Boulanger	Pointe-aux-Trembles	Lib.
Montréal—Bourassa	124,746	78,559	48,646	26,550	J.-L. Trudel	Montreal	Lib.
Mount Royal	90,844	59,202	43,525	32,166	Rt. Hon. P.-E. Trudeau ²	Ottawa	Lib.
Notre-Dame-de-Grâce	77,052	45,939	33,177	20,151	Hon. W. Allmand	Montreal	Lib.
Outremont	75,621	44,931	30,725	20,400	Hon. M. Lalonde	Montreal	Lib.
Papineau	73,439	41,921	25,583	14,532	Hon. A. Ouellet	Montreal	Lib.
Saint-Denis	77,362	36,737	25,640	15,310	M. Prud'homme	Montreal	Lib.
Saint-Henri	57,162	29,790	17,664	8,813	G. Loiselle	Montreal	Lib.
Saint-Jacques	53,179	24,845	14,740	7,709	J. Guilbault	Montreal	Lib.
Sainte-Marie	58,381	34,418	20,595	8,300	R. Dupont	Longueuil	Lib.
Saint-Michel	138,109	81,077	49,012	29,822	Monique Bégin	Saint Léonard	Lib.
Vaudreuil	112,103	71,417	51,630	29,685	H.T. Herbert	Hudson	Lib.
Verdun	74,718	47,567	31,286	17,633	Hon. B. Mackasey	Verdun	Lib.
Westmount	83,645	51,592	37,127	20,816	Hon. C.M. Drury	Ste-Cécile-de-Masham	Lib.
ONTARIO (88 members)							
Algoma	52,746	30,937	21,927	11,360	M. Foster	Desbarats	Lib.
Brant	97,549	62,333	46,444	19,453	D. Blackburn	Brantford	NDP
Bruce—Gray	63,308	46,111	36,225	17,158	C. Douglas	Wingham	Lib.
Cochrane	54,786	31,793	21,073	11,379	R.W. Stewart	Moonbeam	Lib.
Elgin	66,608	43,088	33,799	15,851	J. Wise	St. Thomas	PC
Essex—Windsor	94,846	60,901	44,305	24,357	Hon. E.F. Whelan	Amherstburg	Lib.
Fort William	60,207	38,892	28,336	13,789	P. McRae	Thunder Bay "F"	Lib.
Frontenac—Lennox and Addington	61,668	40,801	29,329	14,102	D. Alkenbrack	Napanee	PC
Glengarry—Prescott—Russell	62,599	41,302	30,714	18,478	D. Éthier	Dalkeith	Lib.
Grenville—Carleton	119,408	79,873	62,620	33,946	W. Baker	Ottawa	PC
Grey—Simcoe	67,997	47,652	34,454	15,917	G. Mitges	Owen Sound	PC
Halton	105,801	68,063	52,145	23,520	F. Philbrook	Oakville	Lib.
Halton—Wentworth	124,390	82,370	61,964	26,798	B. Kemping	Dundas	PC
Hamilton East	74,709	39,992	28,356	15,298	Hon. J.C. Munro	Hamilton	Lib.
Hamilton Mountain	106,266	67,718	50,965	22,217	G. MacFarlane	Hamilton	Lib.
Hamilton—Wentworth	99,169	67,067	48,002	18,874	S. O'Sullivan	Hamilton	PC
Hamilton West	81,664	49,060	34,372	15,421	L.M. Alexander	Hamilton	PC
Hastings	64,328	42,657	31,076	14,893	J. Ellis	Belleville	PC
Huron—Middlesex	58,515	38,560	29,122	17,185	R.E. McKinley	Zurich	PC
Kenora—Rainy River	54,853	33,993	23,197	10,317	J.M. Reid	Kenora	Lib.
Kent—Essex	85,580	53,937	36,197	17,800	B. Daudlin	Leamington	Lib.
Kingston and The Islands	82,907	53,642	38,820	17,844	Flora MacDonald	Kingston	PC
Kitchener	106,127	66,445	48,427	21,091	P. Flynn	Kitchener	Lib.
Lambton—Kent	67,892	43,021	29,687	14,315	J.R. Holmes	Wallaceburg	PC
Lanark—Renfrew—Carleton	63,818	43,953	34,816	18,242	P. Dick	Kanata	PC
Leeds	66,263	43,597	33,375	17,724	T. Cossitt	Brockville	PC
Lincoln	84,935	52,148	39,087	17,499	B. Andros	Niagara-on-the-Lake	Lib.
London East	89,221	53,199	36,788	18,429	C.R. Turner	London	Lib.
London West	106,317	76,796	57,593	32,188	J. Buchanan	London	Lib.
Middlesex—London—Lambton	92,814	58,435	44,306	20,703	L. Condon	Strathroy	Lib.
Mississauga	172,532	118,909	87,492	38,517	T. Abbott	Oakville	Lib.
Niagara Falls	89,537	55,345	39,004	20,618	R. Young	Niagara Falls	Lib.
Nickel Belt	85,577	46,001	35,587	17,668	J. Rodriguez	Capreol	NDP
Nipissing	67,312	41,154	30,743	16,549	J.-J. Blais	North Bay	Lib.
Norfolk—Haldimand	74,568	47,842	37,046	17,867	W. Knowles	Langton	PC
Northumberland—Durham	73,705	50,584	38,965	16,824	A. Lawrence	Janetville	PC
Ontario	87,842	54,783	42,440	20,096	N.A. Cafik	Pickering	Lib.
Oshawa—Whitby	111,361	72,407	51,661	25,013	E. Broadbent ⁴	Oshawa	NDP
Ottawa—Carleton	130,906	93,141	72,344	38,465	Hon. J. Turner	Ottawa	Lib.
Ottawa Centre	70,584	46,561	35,640	15,308	H. Poulin	Ottawa	Lib.
Ottawa—Vanier	71,277	45,372	32,365	21,773	J.-R. Gauthier	Ottawa	Lib.
Ottawa West	98,956	68,085	52,907	23,604	L. Francis	Ottawa	Lib.
Oxford	80,336	51,752	40,937	18,934	B. Halliday	Tavistock	PC
Parry Sound—Muskoka	62,162	43,279	31,807	14,030	S. Darling	Burks Falls	PC
Peel—Dufferin—Simcoe	119,885	79,104	58,927	27,298	R. Milne	Brampton	Lib.
Perth—Wilmot	72,996	48,075	35,226	17,636	B. Jarvis	Stratford	PC
Peterborough	85,064	58,250	45,235	23,865	Hon. J.H. Faulkner	Lakefield	Lib.
Port Arthur	57,456	36,647	26,756	14,523	Hon. R.K. Andras	Thunder Bay	Lib.
Prince Edward—Hastings	74,856	48,835	35,844	19,219	Hon. G. Hees	Cobourg	PC
Renfrew North—Nipissing East	61,707	35,060	26,701	14,613	L.D. Hopkins	Petawawa	Lib.
Sarnia—Lambton	83,631	51,728	36,917	20,661	J. Cullen	Sarnia	Lib.
Sault Ste Marie	81,002	47,643	37,898	19,050	C. Symes	Sault Ste Marie	NDP

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the thirtieth general election, July 8, 1974 (continued)

Province and electoral district	Population, Census 1971	Voters on list	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Postal address	Party affiliation ¹
ONTARIO (concluded)							
St. Catharines	101,418	68,509	49,011	22,526	G. Parent	St. Catharines	Lib.
Simcoe North	93,655	64,616	47,326	18,857	P.B. Rynard	Orillia	PC
Stormont—Dundas	72,052	46,332	34,669	18,047	E. Lumley	Cornwall	Lib.
Sudbury	94,624	57,344	44,579	23,374	J. Jerome ^a	Sudbury	Lib.
Thunder Bay	53,214	32,842	21,029	11,435	K. Penner	Dryden	Lib.
Timiskaming	49,870	30,205	22,061	10,263	A. Peters	New Liskeard	NDP
Timmins	53,616	33,297	25,379	12,904	J. Roy	Timmins	Lib.
Victoria—Haliburton	60,996	44,758	32,932	17,570	W.C. Scott	Kinmount	PC
Waterloo—Cambridge	120,719	81,248	61,466	25,479	M. Saltsman	Cambridge	NDP
Welland	82,860	53,088	37,845	21,228	V. Raitlon	Port Colborne	Lib.
Wellington	75,989	50,983	39,421	18,139	F. Maine	Guelph	Lib.
Wellington—Grey— Dufferin—Waterloo	73,846	48,948	34,125	17,253	P. Beatty	Fergus	PC
Windsor—Walkerville	87,514	52,447	40,099	18,977	M. MacGuigan	Windsor	Lib.
Windsor West	90,466	51,150	35,056	19,474	Hon. H. Gray	Windsor	Lib.
York North	125,296	87,554	68,819	34,179	B.J. Danson	Willowdale	Lib.
York—Simcoe	99,624	67,128	50,331	23,591	S. Stevens	King City	PC
Metropolitan Toronto							
Broadview	78,601	35,119	23,754	9,392	J. Gilbert	Toronto	NDP
Davenport	84,780	27,622	20,851	12,294	C.L. Caccia	Toronto	Lib.
Don Valley	104,606	71,345	57,702	29,180	J. Gillies	Ottawa	PC
Eglinton	78,314	52,008	41,133	19,951	Hon. M. Sharp	Ottawa	Lib.
Etobicoke	135,971	92,769	73,969	37,847	Hon. A. Gillespie	Toronto	Lib.
Greenwood	80,797	43,720	31,992	11,038	A.F. Brewin	Toronto	NDP
High Park—Humber Valley	86,050	53,016	40,997	17,389	O. Jelinek	Toronto	PC
Parkdale	82,207	36,612	25,307	13,134	Hon. S. Haidasz	Toronto	Lib.
Rosedale	81,265	47,645	35,723	17,227	Hon. D.S. Macdonald	Toronto	Lib.
St. Paul's	72,174	46,761	35,561	16,100	J. Roberts	Toronto	Lib.
Scarborough East	149,514	89,142	65,578	30,586	M. O'Connell	Scarborough	Lib.
Scarborough West	87,383	51,012	37,691	13,702	A. Martin	Scarborough	Lib.
Spadina	75,487	24,711	17,506	9,393	P. Stollery	Toronto	Lib.
Toronto—Lakeshore	77,227	46,537	35,713	14,241	K. Robinson	Toronto	Lib.
Trinity	81,073	27,364	20,395	10,683	A. Nicholson	Toronto	Lib.
York Centre	160,051	88,379	64,350	31,792	B. Kaplan	Toronto	Lib.
York East	102,910	65,188	48,709	20,682	D. Collettette	Toronto	Lib.
York—Scarborough	193,156	124,638	98,594	47,450	Hon. R. Stanbury	Don Mills	Lib.
York South	85,768	38,715	29,191	12,473	U. Appolloni	Toronto	Lib.
York West	139,650	72,177	53,391	28,075	J. Fleming	Weston	Lib.
MANITOBA (13 members)							
Brandon—Souris	62,547	41,314	28,856	16,624	Hon. W.G. Dinsdale	Brandon	PC
Churchill	77,507	45,107	27,476	11,415	C. Smith	Thompson	PC
Dauphin	54,110	34,440	24,611	11,439	G. Ritchie	Dauphin	PC
Lisgar	56,974	35,657	23,375	16,478	J.B. Murta	Graysville	PC
Marquette	54,070	33,253	23,885	16,033	C. Stewart	Minnedosa	PC
Portage	51,951	31,138	21,731	11,829	P.P. Masniuk	Inwood	PC
Provencher	62,089	37,738	24,590	13,405	J. Epp	Steinbach	PC
St. Boniface	103,943	69,572	51,522	21,812	J.-P. Guay	St. Boniface	Lib.
Selkirk	98,106	66,551	50,643	22,441	D. Whiteway	Winnipeg	PC
Winnipeg North	83,845	54,039	37,006	15,026	D. Orlikow	Winnipeg	NDP
Winnipeg North Centre	73,559	43,086	27,160	12,023	S.H. Knowles	Winnipeg	NDP
Winnipeg South	94,743	65,017	50,888	23,297	Hon. J. Richardson	Winnipeg	Lib.
Winnipeg South Centre	114,803	76,499	56,688	32,277	D. McKenzie	Winnipeg	PC
SASKATCHEWAN (13 members)							
Assiniboia	57,131	33,321	26,852	9,986	R. Goodale	Wilcox	Lib.
Battleford—Kindersley	66,855	38,453	29,201	10,751	C. McIsaac	North Battleford	Lib.
Mackenzie	47,919	29,049	20,600	8,292	S.J. Korchinski	Rama	PC
Meadow Lake	50,391	28,281	19,363	7,419	B. Cadieu	Spiritwood	PC
Moose Jaw	61,810	37,703	28,282	11,678	D. Neil	Moose Jaw	PC
Prince Albert	72,195	44,292	30,167	17,787	Rt. Hon. J.G. Diefenbaker	Prince Albert	PC
Qu'Appelle—Moose Mountain	64,000	37,174	27,813	13,124	Hon. A. Hamilton	Estevan	PC
Regina East	89,048	56,872	40,883	15,030	J. Balfour	Regina	PC
Regina—Lake Centre	97,537	64,657	47,449	16,874	L. Benjamin	Regina	NDP
Saskatoon—Biggar	87,303	56,160	37,781	14,296	R. Hnatyshyn	Saskatoon	PC
Saskatoon—Humboldt	102,185	63,682	47,362	23,242	Hon. O.E. Lang	Saskatoon	Lib.
Swift Current— Maple Creek	60,972	36,309	27,360	11,336	F. Hamilton	Swift Current	PC
Yorkton—Melville	68,896	43,363	32,155	14,586	L. Nystrom	Yorkton	NDP
ALBERTA (19 members)							
Athabasca	67,746	36,601	20,887	13,157	P. Yewchuk	Lac La Biche	PC
Battle River	59,545	35,138	24,770	16,819	A. Malone	Rosalind	PC
Calgary Centre	87,346	56,802	37,834	23,810	H. Andre	Calgary	PC
Calgary North	118,118	67,720	46,796	30,102	E. Woolliams	Calgary	PC
Calgary South	133,796	86,392	61,108	41,530	P. Bawden	Calgary	PC
Crowfoot	55,672	34,635	23,956	18,048	J. Horner	Pollockville	PC
Edmonton Centre	94,410	55,929	33,576	18,165	S.E. Paproski	Edmonton	PC

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the thirtieth general election, July 8, 1974 (concluded)

Province and electoral district	Population, Census 1971	Voters on list	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Postal address	Party affiliation ¹
ALBERTA (concluded)							
Edmonton East	105,904	57,434	35,444	18,293	W.M. Skoreyko	Sherwood Park	PC
Edmonton—Strathcona	109,725	69,820	47,278	25,808	D. Roche	Edmonton	PC
Edmonton West	126,765	86,100	57,430	29,990	Hon. M. Lambert	Edmonton	PC
Lethbridge	75,795	47,857	32,545	20,602	K. Hurlburt	Fort Macleod	PC
Medicine Hat	62,697	39,647	28,391	15,525	B. Hargrave	Walsh	PC
Palliser	100,115	72,591	49,750	34,184	S. Schumacher	Drumheller	PC
Peace River	62,413	36,588	23,430	14,153	G. Baldwin	West Peace River	PC
Pembina	94,678	61,731	44,161	19,172	P. Elzinga	Sherwood Park	PC
Red Deer	78,792	48,123	33,438	22,251	T.G. Towers	Red Deer	PC
Rocky Mountain	63,834	40,711	26,322	16,042	J. Clark	Edson	PC
Vegreville	58,986	35,509	25,537	18,328	D. Mazankowski	Vegreville	PC
Wetaskiwin	71,537	46,718	31,996	21,341	S. Schellenberger	Spruce Grove	PC
BRITISH COLUMBIA (23 members)							
Burnaby—Richmond—Delta	123,381	82,889	62,180	34,013	J. Reynolds	Delta	PC
Burnaby—Seymour	103,410	66,348	49,521	18,058	M. Raines	Burnaby	Lib.
Capilano	103,918	66,491	52,838	25,797	R. Huntington	West Vancouver	PC
Coast Chilcotin	67,858	43,695	29,423	10,336	J. Pearsall	Powell River	Lib.
Comox—Alberni	89,644	56,598	38,158	13,594	H. Anderson	Port Alberni	Lib.
Esquimalt—Saanich	105,411	74,919	55,299	27,571	D. Munro	Victoria	PC
Fraser Valley East	85,401	55,196	40,656	18,780	A.B. Patterson	Abbotsford	PC
Fraser Valley West	117,467	77,253	55,522	22,925	R. Wenman	Surrey	PC
Kamloops—Cariboo	104,739	68,925	49,196	20,474	L.S. Marchand	Kamloops	Lib.
Kootenay West	67,513	42,245	30,373	12,575	B. Brisco	Trail	PC
Nanaimo—Cowichan—The Islands	97,106	68,325	50,125	20,434	T.C. Douglas	Nanaimo	NDP
New Westminster	106,331	66,956	47,000	15,397	S.M. Leggatt	Port Coquitlam	NDP
Okanagan Boundary	101,304	74,876	53,665	23,044	G.H. Whittaker	Kelowna	PC
Okanagan—Kootenay	92,717	61,905	43,269	17,164	H. Johnston	Salmon Arm	PC
Prince George—Peace River	108,022	60,773	40,186	18,769	F. Oberle	Chetwynd	PC
Skeena	87,917	43,901	30,498	12,218	I. Campagnolo	Prince Rupert	Lib.
Surrey—White Rock	104,072	68,892	49,472	21,540	B. Friesen	White Rock	PC
Vancouver Centre	91,473	67,222	45,929	19,064	Hon. R. Basford	Vancouver	Lib.
Vancouver East	85,071	41,537	26,710	9,671	A. Lee	Vancouver	Lib.
Vancouver Kingsway	85,005	46,322	32,268	12,002	S. Holt	Vancouver	Lib.
Vancouver Quadra	79,949	49,692	39,277	18,892	B. Clarke	Vancouver	PC
Vancouver South	88,701	57,141	44,078	23,247	J.A. Fraser	Vancouver	PC
Victoria	88,211	64,965	48,576	26,771	A.B. McKinnon	Victoria	PC
YUKON TERRITORY (1 member)							
Yukon	18,388	12,312	8,354	3,913	E. Nielsen	Whitehorse	PC
NORTHWEST TERRITORIES (1 member)							
Northwest Territories	34,807	21,299	13,008	5,410	W. Firth	Yellowknife	NDP

¹Party standings as a result of the general election, July 8, 1974: Liberal 141, Progressive Conservative 95, New Democratic 16, Social Credit 11, Independent 1.

²Leader of a political party.

³Speaker of the House of Commons.

3.5 Voters on the lists and votes polled at the federal general elections of 1965, 1968, 1972 and 1974

Province or territory	Voters and votes polled			
	Voters on the lists			
	1965	1968	1972	1974
Newfoundland	226,082	237,594	289,294	304,370
Prince Edward Island	56,484	58,216	68,992	73,069
Nova Scotia	401,521	412,791	492,001	524,767
New Brunswick	304,734	317,912	387,136	406,518
Quebec	2,933,031	3,083,260	3,693,918	3,849,009
Ontario	3,609,895	3,846,064	4,601,282	4,803,822
Manitoba	517,928	531,563	610,568	633,411
Saskatchewan	508,733	517,598	558,876	569,316
Alberta	725,447	774,565	955,531	1,016,046
British Columbia	972,063	1,059,959	1,312,832	1,407,066
Yukon Territory ^a	6,660	7,559	10,857	12,312
Northwest Territories ^a	12,326	13,807	19,491	21,299
Total	10,274,904	10,860,888	13,000,778	13,621,005

3.5 Voters on the lists and votes polled at the federal general elections of 1965, 1968, 1972 and 1974 (concluded)

Province or territory	Voters and votes polled			
	Votes polled			
	1965	1968	1972	1974
Newfoundland	148,392	161,570	182,482	175,534
Prince Edward Island	72,006 ¹	51,225	59,078	58,649
Nova Scotia	420,146 ²	339,600	391,590	388,830
New Brunswick	244,184	254,716	298,164	289,492
Quebec	2,073,314	2,229,345	2,790,172	2,592,679
Ontario	2,770,222	2,973,745	3,650,542	3,582,489
Manitoba	382,362	403,272	453,642	448,431
Saskatchewan	404,631	416,793	442,246	415,268
Alberta	534,870	567,416	722,338	684,649
British Columbia	731,438	804,108	961,441	1,014,219
Yukon Territory ³	5,760	6,563	8,638	8,354
Northwest Territories ⁴	9,403	9,563	14,328	13,008
Total	7,796,728	8,217,916	9,974,661	9,671,602

¹Each voter in the double-member constituency of Queens County, PEI had two votes; in 1963, 26,472 voters on the list cast 42,703 votes; in 1965, 26,250 voters on the list cast 44,895 votes.

²Each voter in the double-member constituency of Halifax, NS had two votes; in 1963, 122,846 voters on the list cast 183,402 votes; in 1965, 124,633 voters on the list cast 184,153 votes.

³Electoral district of Yukon.

⁴Electoral district of Northwest Territories.

3.6 Number of municipalities in Canada classified by type and size group, by province, as at Jan. 1, 1974

Type and size group	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
TYPE													
Regional municipalities	—	—	—	—	75	40	—	—	—	28	—	—	143
Metropolitan and regional municipalities ¹	—	—	—	—	3	11	—	—	—	—	—	—	14
Counties and regional districts	—	—	—	—	72	29	—	—	—	28	—	—	129
Unitary municipalities	114	33	65	111	1,577	815	183	784	327	139	3	7	4,158
Cities ²	2	1	3	6	68	43	5	11	9	32	2	1	183
Towns	112 ³	8	38	20	204	146	33	131	102	11	1	3	809
Villages	—	24	—	85	270	130	39	350	168	59	—	3	1,128
Rural municipalities ⁴	—	—	24	—	1,035	496	106	292	48	37	—	—	2,038
Quasi-municipalities ⁵	163	—	—	—	—	14	19	9	22	—	5	7	239
Total	277	33	65	111	1,652	869	202	793	349	167	8	14	4,540
POPULATION SIZE GROUP (1971 Census)													
Unitary municipalities	—	—	1	—	3	14	1	2	2	2	—	—	25
Over 100,000	1	—	2	1	10	12	—	—	—	6	—	—	32
50,000-99,999	1	1	16	6	72	65	3	5	12	29	1	—	211
10,000-49,999	112	32	46	104	1,492	724	179	777	313	102	2	7	3,890
Under 10,000	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	114	33	65	111	1,577	815	183	784	327	139	3	7	4,158

¹Includes urban communities in Quebec; and Metropolitan Toronto, regional municipalities and the district municipality in Ontario.

²Includes the five boroughs of Metropolitan Toronto.

³Includes eight rural districts.

⁴Includes municipalities in Nova Scotia; parishes, townships, united townships and municipalities in Quebec; townships in Ontario; rural municipalities in Manitoba and Saskatchewan; municipal districts and counties in Alberta; and districts in British Columbia.

⁵Includes local government communities, local improvement districts and the metropolitan area in Newfoundland; improvement districts in Ontario and Alberta; local government districts in Manitoba; local improvement districts in Saskatchewan and the Yukon Territory; and hamlets in the Northwest Territories.

3.7 Canadian financial contributions to the United Nations, years ended Mar. 31, 1974 and 1975 with totals for 1945-75 (thousand dollars Canadian)

Agency	1974	1975	Total 1945-75
UN regular budget	7,169	8,838	82,001
Peacekeeping			
UNEF I	—	—	5,910
ONUC	—	—	9,187
UNFICYP	1,722	3,362	24,391
UN Special Account	—	—	4,307
UNEF II	954	2,803	3,757
Social and economic programs			
UNDP	20,300	22,200	136,571
Special Fund	—	—	21,378

3.7 Canadian financial contributions to the United Nations, years ended Mar. 31, 1974 and 1975 with totals for 1945-75 (thousand dollars Canadian) (concluded)

Agency	1974	1975	Total 1945-75
EPTA	—	—	26,376
UNHCR	950 ¹	550	38,732
UNICEF	2,300	2,500	30,375
UNRWA	1,150	1,150	31,403
UNITAR	60	60	600
UNETPSA	75	175	474
WFP	20,740	3,739	131,252
UNFPA	2,000	2,500	9,552
UN Fund for Congo	—	—	4,489
Committee on Elimination of Racial Discrimination	1	2	10
Trust Fund for South Africa	10	10	50
UN Fund for Drug Abuse Control	200	200	750
UN Voluntary Fund for Environment	905	—	16,215
Miscellaneous	—	—	1,004
Specialized agencies, IAEA and GATT			
ILO	1,517	1,497	16,806
FAO	2,842	2,141	22,357
WHO	4,581	1,395	29,473
UNESCO	1,756	2,453	20,126
ICAO	539	424	6,156
IMCO	27	27	252
ITU	453	503	4,101
WMO	172	178	1,147
UPU	88	132	876
IAEA regular and operational budgets	236	881	6,065
GATT	401	557	3,247
Miscellaneous	—	—	92
UN Association in Canada	27	35	435
Total	71,175	58,312	689,917

¹Includes a special contribution of \$500,000 to the Special Program for Resettlement of Refugees in the Southern Sudan.

Sources

3.1 Journals Branch, House of Commons.

3.2 Clerk of the Senate.

3.3 Office of the Representation Commissioner.

3.4 - 3.5 Office of the Chief Electoral Officer.

3.6 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

3.7 Information Division, Department of External Affairs.

Chapter 4

Demography

Demography deals with the growth, distribution, density, characteristics, vital statistics, migration, etc., of human population. The present chapter is concerned with this subject as it applies to the population of Canada by bringing together recent data on these various demographic components.

The subject is treated by first providing a brief picture of population growth in Canada, followed by a summary from the 1971 Census of the geographical distributions of population and some of the principal demographic characteristics relating to population, households and families (Sections 4.1 to 4.4). Other statistics from the 1971 Census of Canada may be found in chapters 8, 11, and 14 of this edition on the subjects of labour force, agriculture, and housing, respectively.

A major portion of the chapter on Demography is concerned with the vital processes (fertility, mortality, nuptiality) which play such a major role in shaping population trends and composition (Sections 4.5 to 4.8).

The final section of the Demography chapter deals briefly with the important migration factors (immigration, emigration and internal migration) which also exert a significant influence on population change and structure (Section 4.9).

4.1 Population growth

The most fundamental fact about a population is its rate of growth which affects almost every aspect of the national life. The opening up of a new continent and the gradual evolution of an industrial and urban economy form the historical background for population growth in Canada. Several demographic elements have combined to produce this growth: births, deaths, immigration and emigration, which are the processes, or components, of population change.

4.1.1 The early period

The growth of Canada's population today is the culmination of a trend which began around the early 17th century with the arrival of the first French settlers. From this beginning, the population of the area now known as Canada (excluding Newfoundland) grew from a handful of colonists and an unknown number of native Indians and Eskimos in 1611 to about 2.4 million in 1851 and 3.7 million at the first Census of Canada in 1871. Rough estimates indicate there were about 136,000 Indians in 1851.

Growth rates in the early settlement years were very irregular: the immigrant population grew rapidly while the native population remained almost stationary or declined as a result of attrition from warfare and disease. Between 1681, when the number of settlers passed the 10,000 mark, and 1851 the average annual growth rate of the non-native population in each decade varied between 1.6% and 4.5%; the average annual growth rate for the whole period was 3.2%. The small size of the initial population and the continuous expansion into empty lands were contributing factors in the rapid growth rates in the early periods.

The decade 1851-61 was one of surging growth, second only to the growth rate in the first decade of the present century (Table 4.1). The average annual growth rate during this period was 2.9%, with about 23% of the total population increase due to net migration; over 350,000 immigrants arrived and there was very little emigration. A long period of slow growth followed and lasted until the beginning of the 20th century. Between 1861 and 1901 the average growth rate was closer to 1%, matched only by the rate during the depression period of the 1930s. This slow growth toward the end of the last century was due to heavy emigration resulting in a net migration loss (Table 4.2). Emigrants included elements of both the Canadian and foreign-born populations. While many immigrants continued to come to Canada during this period a large number of them re-emigrated to the United States where prospective settlers were offered more favourable economic and climatic conditions. The westward movement in the United States attracted not only settlers from every part of that country, but from Canada as well.

4.1.2 Recent trends

The beginning of the present century witnessed a flood of immigrants which helped to raise the growth rate to 3.0% per annum during 1901-11, the highest rate recorded since 1851. Over 1.5 million immigrants entered Canada in this decade, as many as had arrived during the previous 40 years. As a result, over 44% of the total population increase during this period was due to migration gain.

Following the phenomenal increase during 1901-11, the intercensal rate of increase dropped during each successive decade until it reached a low of 10.9% during 1931-41 when the reduced birth rates during the economic depression seriously affected population growth. Moreover, immigration during this period was negligible, and as a result there was a net migration loss of about 92,000 persons.

After 1941, the population again registered an accelerated growth, reaching a near-record rate of expansion of 30.2% in 1951-61, nearly three times the rate of increase in 1931-41. Part of the accelerated increase in population after 1941 was accounted for by the addition of Newfoundland in 1949 but the surge in birth rates (commonly referred to as the "baby boom") and the upswing in immigration during the immediate postwar years were the main factors of growth during the period.

After 1956 a steady decline in population growth occurred, reaching a rate of 1.5% per annum in 1966-71. This gradual fall in the growth rate in recent years — the lowest except the depression decade — has evoked special interest mainly because it occurred after the growth rate reached a peak of 3.3% in 1956-57 and at a time when the economic outlook was favourable for high growth rates. The current annual growth rate (1972-73) is estimated to be about 1.2%. In absolute numbers, between 1966 and 1971 the population increased by 1,553,000, or 310,000 a year, which was about 25% lower than the increase during 1951-56. The sharp reduction in population growth in recent years due to the marked decline in birth rates and lower immigration has caused speculation on the possibility of Canada's population growth approaching the zero level in the very near future.

4.1.3 Future prospects

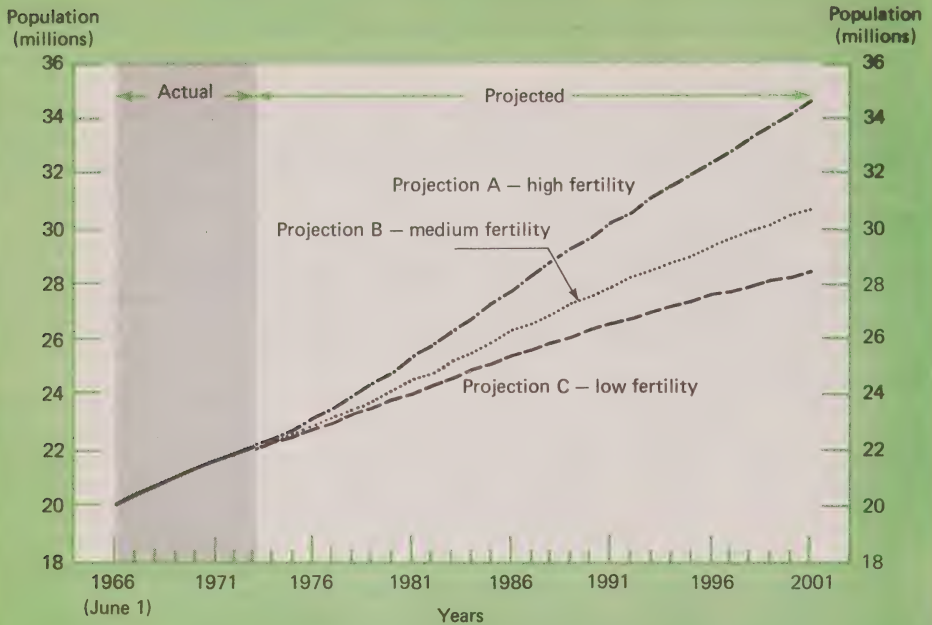
The dominant component of population growth in Canada since 1851 has been natural increase. This trend is likely to continue in the future with a modest contribution from migration. Of the two components of natural increase (births minus deaths), the birth rate will continue to be the dynamic and crucial factor of growth. Moreover, fluctuations in birth rates can create major economic and social problems as society adjusts itself to the effects of such fluctuations. For example, although the postwar "baby boom" is long past, society is now feeling the impact of this generation on the labour market and other aspects of the national economy. Similarly, problems associated with the sharp drop in the birth rate since 1957 are being felt, for example, by school systems as fewer children enter school.

Because of the importance of the fertility factor, the tempo of future growth depends mainly on whether the current total fertility rate of 2.19 births (1971), which is close to the "replacement level" of 2.13 births under current mortality conditions, will remain constant, fall or rise in future. A fertility rate close to the replacement level does not mean that Canada will soon reach zero population growth. Calculations show that even if immigration ceased, and the average fertility rate were only 2.13, the population would continue to grow until about the year 2040, when birth and death rates would each stabilize at about 13 per 1,000 population. This long delay in achieving zero growth may be attributed to the current high percentage of young people who are moving into the child-bearing age groups.

Table 4.3 summarizes for Canada as a whole the results of the most recent population projections for Canada and the provinces prepared under different assumptions of fertility and migration. These projections replace earlier ones which were shown in the *1974 Canada Year Book*. For a full account of the methodology and results of these projections, see *Population projections for Canada and the provinces, 1972-2001*, Statistics Canada Catalogue No. 91-514.

Projection A uses the highest fertility assumption of 2.60 children by 1985, and a net migration gain of 100,000 a year. Under these assumptions, the total population will increase from 21.6 million in 1971 to 27.8 million in 1986 and will reach 34.6 million by 2001. On the other hand, Projection C is a low projection based on an assumed total fertility rate for Canada

Population projections¹ for Canada, 1973-2001



1. See footnotes to Table 4.3 for summary of main assumptions underlying each of the three different projections A, B and C.

of 1.80 by 1985, and a net migration gain of 60,000 a year. As shown in Table 4.3, this projection yields a total population of 25.4 million by 1986 and 28.4 million by 2001.

These projections indicate that after a short phase of increase in the population growth rate (i.e. between 1976 and 1986), the rate will gradually decline toward the end of the century to about 1.3% per annum according to Projection A, and to 0.5% under Projection C. The slowdown in population growth and fertility rates will cause some aging of Canada's population. As a result of an upward shift in the age structure, there will be a steady decline in the child-dependency ratio and an increase in the old age dependency ratio.

4.2 Population distribution

Decennial and quinquennial censuses of Canada make possible periodic assessments of the size and location of the nation's human resources. They provide data on the distribution of population for many types of geographical, political, and statistical entities. Used as benchmarks, the census counts enable annual estimates to be made for some of the larger areas (e.g. provinces, counties, metropolitan areas). A small selection of these data is presented in this Section, embodying results of the 1971 Census and later estimates to 1974 where applicable.

4.2.1 Provincial and sub-provincial areas

Heading the list of population distributions are those relating to federal electoral districts. The basic legal reason for decennial censuses is to enable a redistribution of seats in the House of Commons. Under the terms of the Electoral Boundaries Readjustment Act, the census must provide population counts by electoral districts for this purpose. Those from the most recent (1971) census are shown in Chapter 3, Table 3.4, according to the electoral district boundaries established by the 1966 Representation Order (i.e. the redistribution following the 1961 Census).

Provincial trends, 1951-71. The growth of Canada's population has not been uniformly distributed among the provinces. The distributions for the 1951-71 period are presented in Table 4.4 and they show substantial variations in rates of growth. This is evident from the number of provinces with higher or lower growth rates compared with the national average. Ontario, British Columbia, Alberta and the Northwest Territories had growth rates higher than national figures in all five-year periods between 1951 and 1971. However, a decline in the rate of growth over the past 20 years occurred in all provinces as birth rates began to fall in the mid-1950s. The most spectacular change took place in Quebec where the rate of growth declined by about 70% between 1951-56 and 1966-71 (i.e. from 14.1% to 4.3%). The growth rate in Quebec in 1966-71 was less than half of the rate during the preceding five-year period.

The slow population growth of 1966-71 was not shared equally among the provinces. The lowest rates occurred in the Atlantic provinces, Quebec, Manitoba and Saskatchewan. Saskatchewan registered an actual decline in population during this period. British Columbia had the highest growth rate (16.6%) in 1966-71, followed by Alberta and Ontario. The uneven rates of increase among the provinces in 1966-71 imply that during this period net migration reinforced the natural growth of population in Ontario, Alberta and British Columbia and depressed it in all others (see Table 4.5).

Provincial estimates, 1974. In addition to the five-year census counts, estimates are constructed for the total population of Canada and for each province on both an annual and quarterly basis. The estimates of population begin with the preceding census counts, to which are added the births of each year and from which the deaths are subtracted; immigrants are added and an estimate of emigrants subtracted. Family allowance statistics showing the number of migrant families by province are used in estimating interprovincial shifts in population. Finally, the next succeeding census serves as a basis for revision of all annual estimates of each intercensal period.

Table 4.6 shows the revised annual population estimates by province for the years 1967 to 1970, and the provisional estimates for 1972, 1973 and 1974. Included in the Table are the actual enumerated counts for the two "benchmark" census years of 1966 and 1971. The estimate for Canada of 22,446,000 population at June 1, 1974 is the result of adding 346,000 births and 214,000 immigrants to the previous 1973 estimate of 22,095,000 and then subtracting 166,000 deaths and a residual of 43,000 representing mainly emigrants.

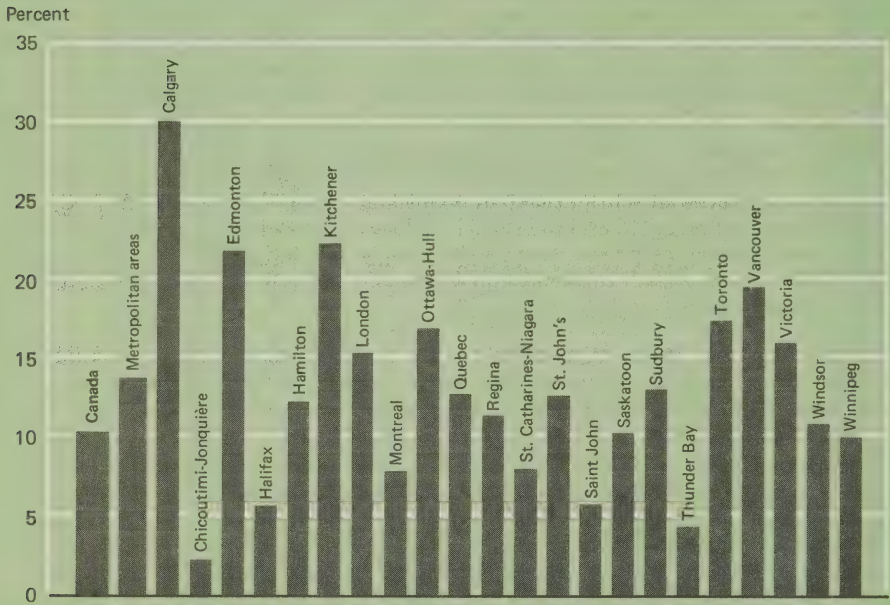
Cities, towns and villages. As at June 1, 1971, some 65.4% of Canada's population lived in 2,120 centres classified as incorporated cities, towns and villages. These are grouped into 13 broad size categories in Table 4.7. There were only two cities within whose incorporated boundaries the population was over 500,000 (Montreal and Toronto), representing a combined 8.9% of the total population. At the other end of the scale, 1,093 or one half of all incorporated cities, towns and villages had less than 1,000 population, but together they accounted for only 2.1% of Canada's population.

Canadian cities and towns having a population of over 50,000 in 1971 are listed in Table 4.8 together with figures for 1961 and 1966. The date of incorporation to their present status of a city or town is indicated also. Since the population counts for the three census periods relate to the incorporated limits of the city or town at each of these dates, the growth figures are not strictly comparable in those instances where boundary changes due to annexations, etc., have taken place. Asterisks in the table indicate all cases where such changes have occurred.

Metropolitan areas. For census purposes a metropolitan area represents the main labour market of a continuous built-up area having a population of 100,000 or more. The growth of each of the 22 census metropolitan areas can be observed over the period 1951-71 in Table 4.9 where the populations of these areas in earlier censuses have been adjusted to conform to the boundaries delineated for the 1971 Census. For many purposes these figures, which essentially measure the size of Canada's major urban agglomerations, are more meaningful than the data relating only to the incorporated limits of the central cities shown in Table 4.8.

The proportion of Canada's population living in the major metropolitan centres has been steadily increasing in recent years to the point where over one half (55.1%) now reside within the boundaries of the 22 metropolitan areas as defined for the 1971 Census. Calgary showed the highest rate of growth in the most recent period (1966-71) at 22.1%, followed by Edmonton at 16.5%. However, the greatest actual gains were registered by Toronto which

Percentage increase of the population of Canada and the metropolitan areas, 1966-73



increased by 338,000 and by Montreal which gained 172,000. At the same time, Vancouver joined these two metropolitan centres in becoming the third urban agglomeration in Canada to pass the "over-a-million" population mark.

Because of the growing interest in the expanding population of the larger metropolitan areas of Canada, a series of intercensal estimates was begun in 1957. Table 4.9 includes these estimates for 1973 along with the census counts of 1951-71. As in preparation of intercensal population estimates for provinces, the births occurring in the metropolitan areas between June 1, 1971 and June 1, 1973 were added to the population at the census date and deaths subtracted. Immigrants over this period reporting these metropolitan areas as places of destination were added and allowances made for losses in population by emigration. Also, the net in-movement caused by internal migration was calculated from family allowances and other data.

4.2.2 Population density

At six persons a sq mile in 1971, Canada's crude or average population density still ranks among the lowest in the world. Table 4.10 shows that if the Yukon Territory and Northwest Territories were omitted from this calculation, there would be 10 persons a sq mile in 1971 compared to eight in 1961 and six in 1951. However, such average density figures over all types of land terrain and open spaces in the country or in individual provinces obscure the high urban densities which can reach close to 20,000 persons a sq mile as in the over-all figure for the cities of Montreal and Toronto. Moreover, the highest provincial densities are not necessarily found among the provinces with the largest populations. For example, the highest average density of any province is that of Prince Edward Island (51 persons a sq mile), which has the smallest population and represents an anomaly resulting from its very limited land area rather than from heavy concentrations of population. In contrast, the far more populous province of British Columbia, with its vast mountainous regions and areas of sparse population, has an average density of only six persons a sq mile.

4.2.3 Urban and rural

The urban population was defined in the 1971 Census as all persons living in incorporated cities, towns and villages with a population of 1,000 and over, as well as in unincorporated places of 1,000 and over having a population density of at least 1,000 a sq mile. Also considered as urban were the built-up fringes of these cities, towns and villages if they met the same criteria of population and density. All the remaining population was classified as rural.

Table 4.11 indicates that over three quarters (76.1%) of Canada's population is living in an urban environment, with the degree of urbanization on a provincial basis ranging from 38.3% in Prince Edward Island to 82.4% in Ontario. In comparison with the national average, only two provinces — Ontario and Quebec — were more highly urbanized. The proportion of urban population fell below 50% in just one case — Prince Edward Island.

The rural population, which accounted for 23.9% of the Canadian total in 1971, is further classified in Table 4.11 as either non-farm or farm. The rural farm population is defined for census purposes as those persons living in rural areas on an agricultural holding of one or more acres with sales of agricultural products amounting to \$50 or more in the previous year. Under this definition, the category of rural non-farm in 1971 accounted for 17.3% of the total population, compared to 6.6% for the rural farm segment.

4.3 Demographic and social characteristics

This Section provides data on the general demographic and social characteristics of the population which were available at the end of 1973 from the most recent 1971 Census of Canada. In certain instances, comparisons with earlier census periods are included. Where they are not, such figures can generally be obtained from the relevant reports of previous censuses.

4.3.1 Sex, age and marital status

The age and sex composition represents the most fundamental of the attributes of a given population. Along with marital status, these variables are primarily a function of vital trends; births, deaths, marriages, and dissolutions of marriages. Social and economic factors, by their effects on vital events and migration, influence these characteristics as well. An unbroken series of census data is available as far back as the first Census of Canada in 1871, although only recent trends are summarized here.

Sex ratios. The relatively short demographic history of the Canadian population has been characterized by an excess of males, although this excess has nearly disappeared in recent years. Over the past century the sex ratio (i.e. number of males per 100 females) for Canada reached a peak of 113 in 1911 following a decade of heavy immigration in which males have traditionally predominated. By 1971 the sex ratio had almost evened out at 100.2 which represented only 22,425 more males than females in a total population of over 21.5 million (Table 4.12). In the older settled provinces east of Manitoba the sex ratio has varied between Nova Scotia's 104 in 1911, and Quebec's and Ontario's 1971 ratio of 99. In the western provinces, which were being rapidly settled in the early years of this century, the sex ratio has ranged between Alberta's 1911 high of 149 and Manitoba's 1971 figure of 100.

Age structure. The age composition of the Canadian population is, of course, a reflection of past trends in vital rates and immigration. The lower birth rates of the 1961-71 period compared to those of the 1950s have had a tremendous impact on the population under 15 years of age in 1971. This age group decreased by 211,000 or 3.2% between 1966 and 1971 compared with a gain of 399,800 or 6.4% in the 1961-66 period. As a result the proportion that this age group formed of the total population fell from 34.0% in 1961 to 29.5% in 1971 (Table 4.13).

The population of working age (generally regarded as those 15-64) increased substantially, with a gain in excess of 1,559,000 or 13.1% in the 1966-71 period. This age group comprised 62.3% of the total population in 1971 compared with 59.4% of the total population in 1966 and 58.4% in 1961. Of the total 1961-71 increase in the 15-64 age group, 49.8% of the gain occurred in the 15-24 age group. This young adult age group in 1971 is, of course, the cohort of children born in the high-birth-rate years following World War II. The proportion of persons 65 years of age and over was approximately the same (roughly 8%) in 1971 as in 1961 and 1966.

The latest estimates of the population by age group and sex are shown in Table 4.14 for Canada and the provinces as at June 1, 1974. The method followed in preparing these estimates was much the same as that used in calculating the population estimates described in Section 4.2.1. These estimates are subject to revision when data from the next census in 1976 become available.

Marital status. Analyses of the trends and size of the single, married, widowed and divorced segments of the population assume their most revealing aspects when these categories are observed in relation to their distributions at different age levels and by sex. Table 4.15 shows these three fundamental demographic characteristics in relationship to each other, based on results of the 1971 Census. The figures show, for example, such imbalances as the far greater numbers of single males than single females at the younger age levels and the reverse for widows as compared to widowers in the older age groups. The former condition results from the generally earlier ages of marriage for females, and the latter is due to the longer life expectancy of females as well as the greater tendency for widowers to remarry.

Among the recent trends in the marital status structure is the steady decrease, since 1951, in the number of married females in the child-bearing ages in relation to the total married women of all ages. This is possibly one of the contributing factors to the sharply declining birth rates in recent years. In 1971, 59.7% of all married females were in the age group 15-44, compared to 61.2% in 1966, 62.9% in 1961, and 64.0% in 1951.

One of the most striking changes revealed by the 1971 Census compared to the previous one in 1966 is the large increase in the number of divorced persons over the 1966-71 period, reflecting in part recent relaxations in the divorce laws. Divorced persons of all ages in 1971 increased to almost three times the size of the 1966 figure (from 64,776 to 175,115). The age group 15-24 experienced the greatest relative increase, but the actual numbers were small compared to most older groups. Moreover, the total number of divorced persons still represented fewer than 1% of Canada's population in 1971. (See also Section 4.8.2.)

4.3.2 Language

In the 1971 Census, three questions were asked on the languages of the Canadian people. Two of these represented the more traditional census inquiries: one on mother tongue (the language first spoken in childhood and still understood) and the other on official language (the ability to speak English, French, or both languages). These were augmented in 1971 by a third question concerned with the language most often spoken at home.

Mother tongue. Summary figures on mother tongue are presented in Table 4.16 which shows the principal languages reported under this concept at the 1971 Census with comparative figures for 1961. It may be noted that the proportion of the Canadian population reporting English mother tongue increased from 58.5% in 1961 to 60.2% in 1971, while the percentage reporting French declined from 28.1 to 26.9. Italian, Greek, Chinese, and Portuguese were others showing significant advances in the 10-year period, while Ukrainian, German, Netherlands, Polish and Yiddish were among the larger groups registering declines.

In addition to providing information on the basic linguistic affiliations of the Canadian people, mother tongue data obtained at decennial censuses form the statistical basis for the creation of Bilingual Districts under the Official Languages Act. For this reason, Table 4.17 is of interest in showing the number and proportion of the population reporting English or French as their mother tongue, by province. The relative gains in English mother tongue over the 1961-71 period occurred mostly in the western provinces at the expense of other mother tongues such as Ukrainian, German and Polish, as the descendants of earlier immigrants now report English as their mother tongue to a greater extent than in previous decades.

Official language. Table 4.18 shows 1971 Census figures on the population reporting the ability to speak one or both of Canada's two official languages, with comparative data for 1961. This table indicates that in 1971 a total of 67.1% were able to speak English only, 18.0% French only, and 13.4% were bilingual. These ratios represent a slight increase in the proportion of the population able to speak both English and French over 1961, when the percentage was 12.2.

Language spoken in the home. The new inquiry on language most often spoken at home was introduced in the 1971 Census on the recommendation of the Royal Commission on Bilingualism and Biculturalism and other groups. It adds a new dimension and insight into the

languages of Canada since some persons, particularly immigrants, do not use either of the two official languages as the one they speak most often in their homes. Conversely, many others with a non-English mother tongue may no longer employ their mother tongue for this purpose. Final results of the 1971 Census in Table 4.16 indicate that 67.0% of the population spoke English most often in their homes, whereas only 60.2% reported English as their mother tongue.

4.3.3 Ethnicity, religion, birthplace

A population made up of diverse ethnic groups, religious affiliations and countries of birth gives rise to political, social and economic problems quite different in nature from a country with a more homogeneous composition. It is equally true that different backgrounds lend variety and diversity to the national life. Because of the varied nature of Canada's population, the measurements provided by decennial censuses on such subjects as ethnic and religious composition are of widespread interest and in continuous demand. Tables 4.19 to 4.21 show summary figures on these subjects from the 1971 Census, with comparative data for earlier years.

Ethnic groups. The ethnic composition of the population of Canada has changed considerably over the years because of many factors, including differences in the flow and source of immigrants. Trends in recent years have been characterized by a gradual decline in the proportions of British Isles groups and a corresponding increase in European ethnic groups other than French. For example, the former groups had dropped from 57.0% of the total population in 1901 to 44.6% by 1971, whereas other European groups rose from 8.5% to 23.0%. The French ethnic group remained relatively stable, starting at 30.7% in 1901, and moving irregularly lower to 28.7% by 1971. Table 4.19 provides 1971 figures for the larger ethnic groups in Canada, together with earlier data from the two previous decennial censuses in 1951 and 1961.

Religious denominations. Census figures on religious denominations do not measure church membership or the degree of affiliation with a particular religious body. Respondents were requested to answer the question "What is your religion?" and to enter if possible a specific religious denomination, sect or community. Thus, the census data on this subject relate to the religious denominations to which persons state they belong, adhere or favour, with the opportunity to report "no religion" if so desired. As shown in the 1971 figures in Table 4.20, three out of every four persons in Canada in 1971 reported one of the three numerically largest denominations — Roman Catholic, United Church or Anglican. Largest relative gains since 1961 occurred in such groups as Jehovah's Witnesses and Pentecostal. None of the major denominations registered actual declines in the 1961-71 period, but the Anglican, Baptist, Lutheran, Presbyterian and United Church groups were among those showing losses relative to the total population.

Country of birth. The proportion of the population born outside Canada has ranged during the present century from a high of 22% throughout the period 1911-31, following the heavy waves of immigration in the early decades, to a low of 15% in 1951 following a period of lower immigration and rising birth rates. Persons born in the United Kingdom comprised over 11% of the population in 1911 and 1921, but this percentage declined gradually to 4.3% by 1971 in the face of the rising proportions of Canadian-born and immigration from other European countries. Persons born in the latter countries rose from 5.6% of Canada's population in 1911 to 7.8% in 1971 (Table 4.21).

4.3.4 The native peoples

Many centuries before the first European settlers arrived on what is now Canadian soil, this vast country had received immigrants in the prehistoric period. Present-day Eskimos (Inuit) and Indians are the descendants of these early settlers but as a result of heavy immigration by other groups they now represent less than 2% of Canada's population. Administration relating to the affairs of the Indian and Inuit peoples is described in Chapter 3. Demographic data on their numbers and locations can be obtained from reports of the 1971 Census of Canada, in which summary figures show a total of 295,215 Indian people and

17,550 Inuit. The former figure includes both registered Indians (231,000) and non-registered (64,000).

From a later source, there were 270,494 persons registered as Indians by the Department of Indian Affairs and Northern Development as of December 31, 1973. These are persons who are entitled to be so registered in accordance with the terms of the Indian Act. They comprise 565 bands who occupy or have access to some 2,200 reserves having a combined area of about 6.3 million acres. Membership of these bands is distributed among the provinces and territories as shown in Table 4.22. The 29 Indian bands in the Yukon Territory and Northwest Territories are located in 59 settlements that have not been formally designated as reserves. No permanent residents of Newfoundland are registered under the Indian Act.

About two thirds of Canada's roughly 18,000 Eskimos reported in the 1971 Census live in communities in the Northwest Territories (11,400), and the remainder mainly in Arctic Quebec (3,800), Labrador (1,000), and Northern Ontario (800). As in the rest of Canada, the Eskimo birth rate has been declining in recent years, but at a faster rate and from a much higher level. By 1971 the birth rate for the Eskimo population in the Northwest Territories had decreased to about 38 per 1,000 as compared with the Canadian average of 17 per 1,000.

4.4 Households and families

This Section relates to some of the basic statistics on households and families collected in the 1971 Census. More detailed information may be found in the 1971 Census reports. Of particular interest will be the reports pertaining to households and families to be published in a series of profile studies of Canada's human resources as part of Volume V of the 1971 Census.

4.4.1 Household size and type

A household, as defined in the census, consists of a person or a group of persons occupying one dwelling. It usually consists of a family with or without lodgers, employees, etc. However, it may consist of a group of unrelated persons, of two or more families sharing a dwelling, or of one person living alone. The statistics presented in this Section pertain to private households only. Collective households such as hotels, motels, institutions of various types (usually considered to contain 10 or more persons unrelated to the household head) have been excluded because their significant dissimilarities from private households could distort the household picture with respect to size and composition.

The number of private households in Canada increased to 6 million in 1971 from 4.5 million a decade earlier, a gain of almost one third. The corresponding population rate of increase was considerably lower at 18%. This difference in growth rates reflects the marked rise in recent years in the number of households consisting of only one or two persons. Table 4.23 shows that the rate of growth in the number of households was not uniform across the country. During the 1961-71 period, urban areas experienced 44.6% growth compared to only 1.9% for rural areas. Provincially, growth rates during this period ranged from 9.1% in Saskatchewan to 45.4% in British Columbia and 60.2% in the Yukon Territory and Northwest Territories. Quebec, Ontario and Alberta were the only other provinces exhibiting a growth rate higher than the national average.

Households by size. Table 4.23 also shows the average size of households by province for the census years 1961, 1966 and 1971. In the 1971 Census, the average size of Canadian households was 3.5 persons as compared to 3.7 persons in 1966 and 3.9 persons in 1961. In all these censuses, the average number of persons per household was highest in Newfoundland. While the decline in the average size of households during the period 1961-66 was attributable to mainly two provinces, New Brunswick and Quebec, a further drop in the average size during the period 1966-71 was realized in all provinces. The average household size in rural areas was 3.9 persons, compared to 3.4 persons in urban areas.

Households by type. All private-type households are divided for census purposes into two basic categories: family households and non-family households, depending upon whether or not there is a family (or families) present in the household. Table 4.24 shows the distribution of households on this basis for census years 1961, 1966 and 1971.

Family households, although they increased in number from 3.9 million in 1961 to almost 4.4 million in 1966 and to 4.9 million in 1971, dropped proportionately from 86.7% in 1961 to

84.5% in 1966 and to 81.7% in 1971. The proportion of households consisting of two or more families dropped from 3.7% in 1961 to 2.0% in 1971, which is usually an indication of a decrease in the incidence of over-crowding in households. Non-family households, on the other hand, increased both in number as well as in proportion to the total number of households. This increase is mainly attributable to the increase in the proportion of one-person households from 9.3% in 1961 to 11.4% in 1966 and 13.4% in 1971. Thus, new family formation alone was not responsible for the over-all increase in the number of households; some family persons and families who previously shared accommodation with other families now maintained their own households.

The distribution of households by type varied significantly with the sex of the head. Only 35.5% (353,710) of the 997,240 households with female heads were family households, compared to 90.8% (4,579,920) for the 5,044,065 households with male heads. Almost half (49.1%, or 489,620) of all female-head households consisted of women living alone. The corresponding figure for households with male heads was only 6.4% (321,720).

Households by age and marital status of head. The distribution of household heads by age for the census years 1961, 1966 and 1971 is given in Table 4.25. Of particular interest is the upward trend in households headed by persons of under 25 years of age. Although total households increased by 16.6% between 1966 and 1971, the number of households with heads under 25 years of age grew by 54.0%, reaching 414,470 in 1971 from 269,065 in 1966. By province, this group increased by as much as 72.6% in Manitoba and 63.0% in Newfoundland. Quebec registered the largest growth in the number of households with heads 70 years of age and over, increasing 17.5% to 125,095 in 1971 compared to 106,459 in 1966. Nationally, however, the proportion of households with heads 70 and over declined slightly to 10.3% of all households from 10.7%.

Growth in the number of households also varied significantly with the marital status of head, as can be seen from Table 4.26. The most significant increase during the 1961-71 period was recorded by households with divorced heads, at 316.9%. The increase was 49.0% from 1961 to 1966, and 179.8% from 1966 to 1971, so that the proportion of households with divorced heads more than doubled from 0.8% in 1966 to 1.9% in 1971. At 92.2%, the increase in households with single never-married heads was the next highest. The rate of increase over the decade was 36.4% for households with widowed heads and 25.6% for households with married heads (including separated).

4.4.2 Family size and composition

A family, as defined in the Canadian census, consists of a husband and wife with or without unmarried children, or a parent with one or more unmarried children, living together in the same dwelling. Adopted children and stepchildren have the same status as own children.

The number of families in Canada increased to 5.0 million in 1971 from 4.5 million in 1966 and 4.1 million in 1961, a gain of approximately one fourth over the decade. Following the patterns of provincial population growth, and particularly reflecting the factors of migration, the largest rate of increase in the number of families occurred in British Columbia (35.4% in the 1961-71 period), followed by Alberta (25.0%), and Ontario (24.5%).

Families by size. The total number and average size of families are given in Table 4.27 by province for the census years 1961, 1966 and 1971. Although the average size of the Canadian family remained the same at 3.9 persons between 1961 and 1966, it dropped to 3.7 persons between 1966 and 1971 as declines in birth rates across the nation began to be reflected in census family-size trends. Quebec and New Brunswick experienced the largest reductions in average family size, decreasing from 4.2 persons in 1961 to 3.9 in 1971 for Quebec, and from 4.3 to 4.0 for New Brunswick.

Families maintaining own households. Families "maintaining their own households" are those in which the head of the family is also the head of the household. Families not maintaining their own households fall into two census sub-categories: families related to the head of the household, and non-related lodging families. The few who do not fit either of these sub-categories are mostly families of employees living in their employer's household.

As can be seen from Table 4.28, 96.6% of the Canadian families in 1971 maintained their own households. These families increased over earlier censuses both in number as well as in

proportion to the total number of families. The majority of the remaining families were related families, characterized by the fact that they were mostly small in size, usually two persons (e.g. the daughter and son-in-law of the household head), and the head of the family was under 25 years of age. On the other hand, lodging families, although increasing slightly in number, constituted a very low proportion of 0.8%, unchanged from the 1966 Census.

Husband-wife families. For the analysis of family data, a useful classification is the subdivision into husband-wife families and one-parent families. Table 4.29 shows the distribution of both types of families by age of family head. In the case of one-parent families, the age of head is further classified into male and female heads. In the case of husband-wife families, this type of subdivision is not necessary, since for statistical tabulating purposes, the husband was considered to be the head of the family in 1971 and earlier censuses.

Although between 1966 and 1971 the proportion of husband-wife families dropped slightly, in actual number they increased. They still constituted a predominant proportion (90.6%) of total Canadian families. The majority of one-parent families were headed by females. During the decade 1961-71, these families increased both in number and proportion from 6.6% in 1961 to 7.4% in 1971. This reflects a slight increase in the incidence of "broken" families in Canada because the proportion of females heading such families increased in the age groups 25-34 and 35-44, and these are the ages in which divorces most frequently take place.

Families by mother tongue of head. Table 4.30 shows the distribution of families by the mother tongue of family head for Canada and the provinces. For census purposes, mother tongue is defined as "the first language learned that is still understood". As might be expected, the proportion of family heads reporting English, French, or other mother tongue in the 1971 Census showed a fairly similar pattern to that for the population as a whole. For example, 60.2% of the Canadian population reported English as the mother tongue, as compared with 57.3% of all family heads. The corresponding proportions for French mother tongue were 26.9% and 25.6%. However, mother tongues other than English or French were reported by only 13.0% of the total population, but by 17.2% of all family heads.

Children in families. There were 8.8 million children in families in 1971. These are limited by definition to children never married and under 25 years of age who were living with their parents or guardians at the time of the census. The above number of children are classified in Table 4.31 into selected age groups which roughly correspond to pre-school-age children (under six years), those of elementary school age (6-14), those at the secondary school level (15-18), and those of college or working age (19-24).

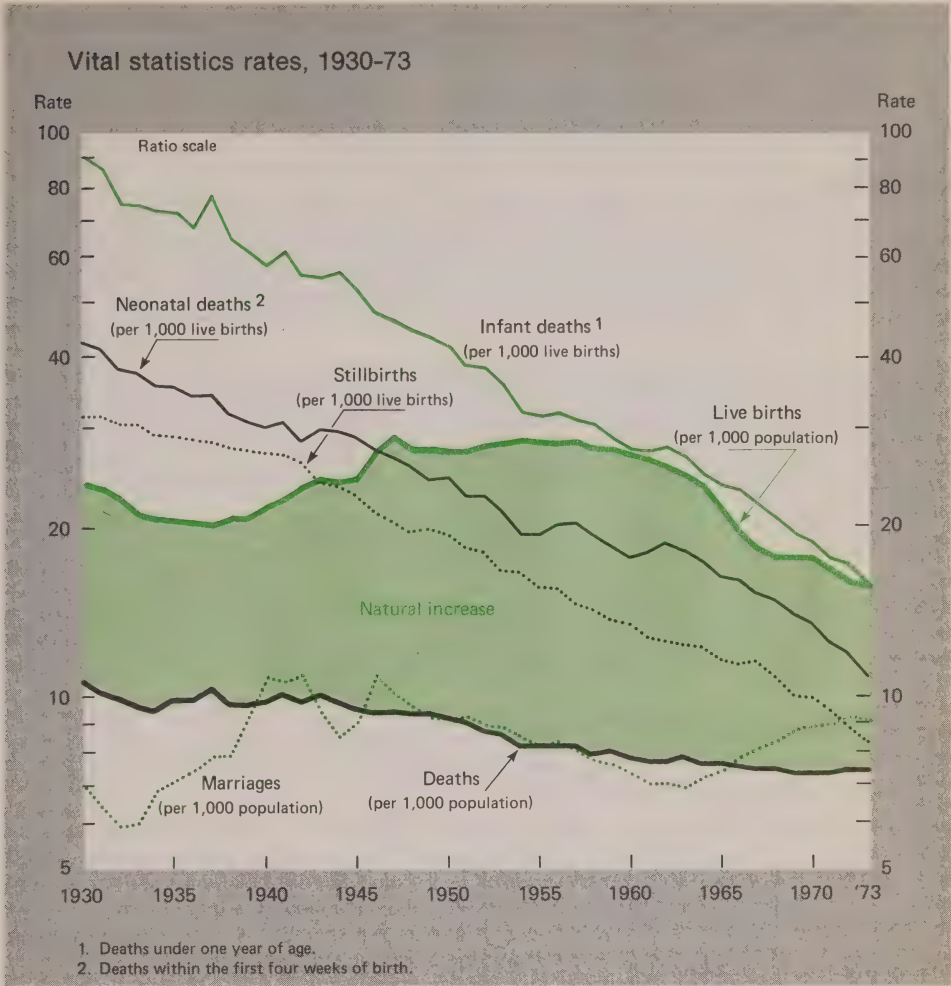
Declining birth rates are reflected dramatically in the proportionate increases of children in families during the 1966-71 period. The 19-24 age group of children in families increased by 20.1% over the five years, the 15-18 group by 16.9%, the 6-14 group by only 5.8%, while those under six years of age declined by as much as 16.2%. Children in families for all age groups combined advanced in numbers by 11.3% (7.8 million to 8.7 million) in the 1961-66 period, but by only 2.2% (8.7 million to 8.8 million) during 1966-71. The average number of children per family declined from 1.9 in 1961 and 1966 to 1.7 in 1971.

4.5 The vital components of population change

Vital statistics are an indispensable key to the interpretation of population change. They provide a measure of the pace at which the population is increasing by natural means (births minus deaths) and the rate at which women are marrying and reproducing. As such they do much to explain the changing patterns of population growth and composition described in earlier sections of this Chapter. These vital processes of population change are reflected in the statistics compiled from the records of births, deaths, marriages and divorces registered in the provinces and territories of Canada.

4.5.1 History of vital statistics

The history of the collection of vital statistics in Canada is described in the *1948-49 Canada Year Book* pp 185-188. Most trend tables on this subject in the present edition are for recent years back to 1951. An historical summary of vital statistics data for Canada and the provinces back to 1921 is contained in the *Vital statistics, Preliminary annual report* (Catalogue



No. 84-201). Some rough estimates of birth, natural increase, and death rates back to the mid-1800s by 10-year periods are contained in Sections 4.6.1, 4.6.3 and 4.7.1, respectively.

4.5.2 Summary of principal data

Table 4.32 provides a summary of the principal vital statistics for 1971, 1972 and 1973 for Canada, the provinces and territories, with comparative figures by five-year periods back to 1951-55. Table 4.33 shows similar data for urban centres of 50,000 population and over for 1973 with comparative averages for 1966-70 and 1961-65. More detailed information on all aspects of current vital statistics as summarized in these tables, including analyses of recent trends, appears in the annual reports *Vital statistics of Canada, Births* (Catalogue No. 84-204), *Marriages and divorces* (Catalogue No. 84-205), *Deaths* (Catalogue No. 84-206) and *Causes of death* (Catalogue No. 84-203), and in other regular and special reports. In addition, certain unpublished data are available on request.

4.6 Fertility

Of all the various interactions of the demographic factors which produce population change (fertility, mortality, nuptiality, immigration, emigration), none exerts greater influence than the rate of reproduction or fertility. By comparison, the nation's death and immigration

rates have become far more stable and it is the birth and fertility rates that will continue to be the dominant factor in the foreseeable future in shaping the demographic structure of Canada (see Section 4.1).

4.6.1 Births

No accurate figures on Canadian crude birth rates are available prior to 1921, when the annual collection of official national figures was initiated. However, the following rough estimates of the average annual crude rates of live births (i.e. per 1,000 total population) for each 10-year intercensal period between 1851 and 1921 may be inferred from studies of early Canadian census data: 1851-61, 45; 1861-71, 40; 1871-81, 37; 1881-91, 34; 1891-1901, 30; 1901-11, 31; 1911-21, 29.

The general trend in the national crude birth rate since 1951 is shown in Table 4.32. The annual rates declined gradually but steadily from 29.3 in 1921 to a record low of 20.1 in 1937, recovered sharply in the late 1930s and during World War II to 24.3 in 1945. Following the war the birth rate rose to a high of 28.9 in 1947. Between 1948 and 1959 the rate remained remarkably stable at between 27.1 and 28.5, but has since declined dramatically to reach a record low of 15.5 by 1973.

The rates for most provinces as shown in Table 4.32 followed trends very similar to the national trend but exhibited some regional differences in recent years. Although all provinces had record high rates immediately following World War II, during the 1951-55 period average birth rates in Ontario and the western provinces were higher than during 1946-50 and those for Quebec and the Maritime provinces were lower. In fact, Ontario, Alberta and British Columbia had record high crude birth rates during the 1956-60 period. By 1973 all provinces had record low rates.

Since these crude birth rates are based on the total population they do not reflect the true fertility of the women of reproductive ages in the different provinces. A more accurate measure of the true birth rate is one based on the number of women between the ages of 15 and 45 (see Table 4.40 and Section 4.6.2).

Sex of live births. With rare exceptions, wherever birth statistics have been collected they have shown an excess of male over female births. The number of males to every 1,000 females born in Canada has averaged around 1,057 since the middle 1930s. Provincial sex ratios vary much more widely because of the relatively fewer number of births involved — the smaller the total number of births, the greater the chance of wide sex-ratio variations from year to year. In 1973, 1,061 male infants were born in Canada for every 1,000 females.

Age of parents. The distribution of legitimate live-born infants born in 1973 by age of the parents is given in Table 4.34, as well as of illegitimate infants by age of mother. This Table shows that 70% of the births in 1973 to married mothers were among 20-29-year-olds, another 15% to 30-34-year-olds, and only about 8.6% of births were to married mothers under 20. By contrast, 47% of the illegitimate births were to unmarried mothers under 20, and an additional 31% to 20-24-year-olds.

Order of birth. Table 4.35 shows the order of birth of all live-born infants in 1973 according to the age of the mother. As would be expected, 32,968 or five out of every six of the 39,518 infants born to mothers 15-19 years of age were the first live-born child, whereas nearly half of the children born to mothers of 20-24 years were their second or later live-born child. In 1973, 334 infants were born to mothers who had not yet reached their 15th birthday.

Table 4.36 summarizes the pattern of family formation since 1951 and shows that the percentages of first and second children have been increasing in recent years. This has been accompanied by a reduction in the proportion of third and higher birth orders.

Illegitimacy. Concurrent with the declining birth rate, the proportion of the live births in Canada which were "illegitimate" (i.e. births in which the parents reported themselves as not being married to each other at the time of the child's birth, and in Ontario those in which the mother was reported as "single" at the time of birth) rose to 9% in 1973, remaining unchanged for the last three years (see Table 4.37). In 1956 illegitimate births constituted about 4% of all live births. In the Yukon Territory and Northwest Territories, roughly one of

every four births in 1973 was considered as illegitimate. Of the provinces, Saskatchewan and Manitoba had the highest percentages at 15.4 and 13.4, respectively.

Stillbirths. The 2,866 stillbirths of at least 28 weeks gestation that were delivered in 1973 represented a ratio of a little over eight for every 1,000 fetuses born alive. As is evident from Table 4.38, the stillbirth ratio has been decreasing steadily and has been cut by more than half over the past quarter-century. Ratios in some provinces have been reduced more than in others. The stillbirth ratio among unmarried mothers has been consistently higher than that among married mothers.

Table 4.39 illustrates the fact that the risk of having a stillborn child increases with the age of the mother. Although stillbirth rates for mothers of all ages have been declining, they continue to be much higher for older mothers than for younger ones.

4.6.2 Fertility rates

The sex and age composition of a population is a fundamental factor affecting its birth rates. Since almost all children born each year are to women between the ages of 15 and 45, variations in the proportion of women of these ages to the total population will cause variations in the crude birth rate of different countries, or of different regions within a country, even though the actual rates of reproduction or fertility of the women in these age groups are identical. It is therefore conventional practice to calculate what are termed age-specific fertility rates, i.e. the number of infants born annually to every 1,000 women in each of the reproductive age groups.

As might be expected, Table 4.40 indicates that women in their 20s are the most reproductive. On the average, for every 1,000 women between the ages of 20 and 25, 118 infants were born during 1973. Expressed another way, about one woman out of eight in that age group gave birth to a live-born infant. For the fourth consecutive year, women in the age group 25-29 had a higher rate (132) than those in their early 20s.

Another measure of fertility is obtainable from what is conventionally referred to as a gross reproduction rate. The gross reproduction rates shown in Table 4.40 indicate the average number of female children born to each woman living through the child-bearing ages. In other words, the gross reproduction rate represents the average number of females that would be born to each woman who lived to age 50 if the fertility rate of the given year remained unchanged during the whole of her child-bearing period. A rate of 1.000 indicates that, on the basis of current fertility and without making any allowance for mortality among mothers during their child-bearing years, the present generation of child-bearing women would exactly maintain itself.

Canada has always had one of the highest gross reproduction rates among the industrialized countries of the world. Even during the period of low birth rates in the 1930s the rate varied between 1.300 and 1.500 and since World War II has ranged from 1.640 in 1946 to a high of 1.915 in 1959. However, since 1959, and particularly since 1964, the national gross reproduction rate has dropped sharply from 1.788 to 0.937 in 1973 — appreciably below the replacement level of 1.000 for the first time in Canada's history. Among the provinces, Quebec, British Columbia and Ontario in that order, had the lowest gross reproduction rates in 1973, all below the replacement level.

4.6.3 Natural increase

The excess of births over deaths, commonly referred to as "natural increase" has been the main factor in the growth of Canada's population. Although the collection of Canadian birth and death statistics began only in 1921, some idea of the rate of natural increase in the early years back to the mid-1800s may be obtained from the estimates of births and deaths shown at the beginning of Sections 4.6.1 and 4.7.1, which produce the following natural increase rates (per 1,000 population): 1851-61, 23; 1861-71, 19; 1871-81, 18; 1881-91, 16; 1891-1901, 14; 1901-11, 18; 1911-21, 16.

During the 1920s and early 1930s the birth rate declined much more rapidly than the death rate and the natural increase rate dropped to a record low of 9.7 in 1937. Higher birth rates during and after World War II and a continued declining death rate caused the natural increase rate to rise steadily from 10.9 in 1939 to a record 20.3 in 1954. After that year there was a steady drop due to declining birth rates and the natural increase rate fell below 10 for the

first time in 1971 at 9.5. It dropped still further to 8.1 in 1973. Table 4.32 gives average rates of natural increase in the provinces for five-year periods 1951-70 and for individual years 1971, 1972 and 1973.

4.7 Mortality

The Canadian crude death rate is one of the lowest in the world (7.4 per 1,000 population in 1973). After a continuous gradual decline over the past century, the rate appears to have levelled off since about 1967. In the opinion of demographers, further reductions in the crude death rate are likely to be small, and to affect primarily persons in the older age groups. Canadian mortality with special reference to infant deaths is discussed in this Section which also includes life expectancy figures compiled from recent death rates.

4.7.1 General mortality

No official crude death rates (i.e. rates per 1,000 total population) are available prior to 1921. However, studies of the early Canadian censuses have resulted in the following estimated annual crude rates for intercensal periods: 1851-61, 22; 1861-71, 21; 1871-81, 19; 1881-91, 18; 1891-1901, 16; 1901-11, 13; 1911-21, 13.

Typical of pioneer populations, Canada had high death rates in the mid-1800s when the country was still in its early stages of settlement. The crude death rate during that period is estimated as between 22 and 25. Although no data are available, it is assumed that while mortality was high at all ages, the rate among infants, children and young adults must have been particularly high. Even in 1921, for example, the Canadian infant mortality rate was still 102.1 per 1,000 live births. With increasing urbanization and improved sanitation and medical services, the crude death rate dropped by 50% from 22 to 11 between 1851 and 1930. It continued to decline to a low of 7.3 in 1970 and 1971, rising slightly to 7.4 in 1972 and 1973.

Table 4.32 shows the trends in crude death rates since 1951 in the provinces and territories. The low rates shown for Newfoundland and Quebec are mainly due to the high proportion of young people in their populations, and the relatively high rates for British Columbia to the high proportion of elderly people in that province.

Table 4.33 shows the numbers of deaths in urban centres of 50,000 population and over in 1973, and the average deaths a year for the periods 1966-70 and 1961-65.

Age and sex distribution of deaths. Since 1921 when the collection of vital statistics was first instituted, the mortality trend at all ages has been downward. However, the principal factor in lowering the general death rate has been the reduction in the mortality of infants and children.

Table 4.41 shows that between 1951 and 1973, death rates for infants and for young children under five years of age dropped by about 60%. Rates for the five-to-14 group also declined steeply. However, rates for boys and young men from 15 to 24 were actually higher than in 1951. Death rates for males over 25 were appreciably lower in 1973 than in 1951, except for men in the 65-74 interval, where there was little change. On the other hand, rates for females of all ages declined very substantially over the period between 1951 and 1973.

As shown in Table 4.42 covering the 1961-71 period, males under 40 accounted for 18.1% of all male deaths in 1961 but for only 13.6% of such deaths in 1971; in 1961, 16.4% of all female deaths were of persons under 40, a percentage that declined to 10.7 in 1971.

The sharp reductions in male infant and child mortality, and the substantial declines in the female rates for all younger age groups, have tended to raise the average age at death. Over the 1961-71 period the average age at death for males rose 3.6 years from 59.7 to 63.3, while that for females advanced 5.1 years, from 63.1 to 68.2. In the same period, the male median age at death rose only slightly, from 67.9 to 68.5, but the gain for females was 2.5 years, from 72.2 to 74.7. Thus, half the females who died in 1971 were more than 74.7 years old.

Causes of death. Table 4.43 presents details of the 1973 Canadian deaths and death rates based on 50 causes as given in the International Abbreviated List (International Classification of Diseases, 8th Revision). Of the 164,039 deaths occurring in 1973, 80,306 or nearly 49% were due to cardiovascular diseases, i.e. to ailments of the heart and circulatory system. Cancer accounted for 33,068, or 20.2%, accidents for 13,166 or 8.0%, and respiratory ailments for 10,761 or 6.6%. Combined, these four causes were responsible for 137,305 deaths, or 83.7% of the total.

The proportion of older people in the population has been rising in recent years. Consequently, cancer and cardiovascular diseases account for a larger proportion of all deaths than formerly. On the other hand, deaths of infants, children and young adults from such diseases as pneumonia and tuberculosis have sharply declined.

Table 4.44 shows that the leading causes of infant mortality are radically different from the main causes of death at later periods. Accidents are the primary cause of death for males between one and 44 years of age. The majority of deaths among older males are due either to cardiovascular diseases or to cancer.

Accidents are also the primary cause of mortality among girls, with cancer being the leading cause of death of young and middle-aged women. Cardiovascular diseases and cancer, in that order, are the leading causes of death for elderly women.

4.7.2 Infant mortality

Table 4.45 shows that mortality rates for both male and female infants (under one year of age) have been reduced by more than half since 1951. For example, if the 1951 death rate had remained unchanged until 1973, there would have been 13,220 infant deaths in that year, rather than 5,339. The improvement is due to many factors including better prenatal and postnatal care, improved sanitation, the use of antibiotics and higher living standards. In recent years, also, older women (a high-risk group) have been having fewer babies.

The 1973 provincial mortality rates for infants of both sexes ranged from 14.1 for Ontario to 19.3 in the case of Newfoundland, with the rates for the Northwest Territories being substantially higher. The national death rate for all infants was 15.5, the lowest on record, with all provinces recording the lowest infant mortality rates in their history.

Table 4.45 shows that male infant mortality in Canada over the past couple of years was 20-25% higher than the corresponding female mortality. Of 1,000 infant boys born alive in Canada during 1973, 17 failed to reach their first birthday, whereas for every 1,000 girl infants born alive there were only 14 fatalities by the end of the first year. Thus, while about 1,060 males are born for every 1,000 females, the higher male infant mortality reduces the excess to some extent during the first year.

Ages of infant deaths. As shown in Table 4.46, 3,692 or over 69% of the 5,339 infants who died during 1973 within a year of their birth died during the first four weeks of life, which is conventionally called the "neonatal" period. Of the 3,692 neonatal deaths, 2,146 or over 58% died during the first day of life and 3,221 or 87% died during the first week. Deaths occurring during the hazardous neonatal period are caused mainly by conditions associated with pregnancy, difficult labour or congenital malformations. As in the case of total infant deaths, the Canadian neonatal death rate dropped by over half since 1951, from 22.6 to 10.8 in 1973, with substantial improvements in all the provinces (see Table 4.45).

Causes of infant deaths. Of the 5,339 infants dying in 1973, 2,619 or close to 50% died of "perinatal" conditions of very early infancy. There were 1,114 deaths from anoxia or hypoxia (absence or deficiency of oxygen), and 502 due to immaturity of the foetus. Still in the "perinatal" mortality group, 257 deaths were ascribed to some condition of the placenta or umbilical cord. Congenital malformations accounted for an additional 1,204 deaths. Of the 490 deaths from respiratory diseases, 334 were due to pneumonia. Suffocation by food and other objects caused 183 infant deaths in 1973. Of the 174 infant deaths from infective and parasitic diseases 97 were due to intestinal infections (see Table 4.44).

4.7.3 Life expectancy

Life tables are measures of life expectancy compiled from the death rates prevailing over a period. They assume that a given cohort of people (usually 100,000) are born simultaneously in a particular year and continue to be subject all their lives to the death rates prevailing in that year, or perhaps to the average death rates for, say, a three-year period centred around that year. The "expected" deaths in the cohort are calculated (in the case of a "complete" life table) for the first year of life, second year of life, etc., and the diminishing cohort is "followed" for 100 or more years until it has been virtually eliminated. Life expectancy at birth is calculated for the entire cohort and, subsequently, remaining life expectancy is calculated for the survivors at one year, two years, etc. It should be noted that the assumptions of such a life table are never fulfilled in practice and that the hypothetical cohorts in life tables

do not represent any actual population. Usually, the persons in an actual cohort born in the life-table year will have a higher life expectancy than those in the life-table cohort because during their lifetimes public health conditions will presumably constantly improve and standards of medical care will also presumably advance.

Seven official sets of life tables have been published to date, based on deaths in the three-year period around each of the censuses of 1931, 1941, 1951, 1956, 1961, 1966 and 1971. The first five of these sets contained tables for Canada and for the five main regions, while the 1966 and 1971 sets included tables for all of the provinces. The Canadian life table values for the 1971 period are given for selected ages in Table 4.47. This Table shows that at 1970-72 mortality rates 2,002 of 100,000 males born would have died in their first year with 97,998 surviving to one year of age, that 126 more would have died in their second year with 97,872 reaching their second birthday and so on. There would be 191 survivors at 100 years of age. The "probability of dying" column represents the ratio between the population at each age and the number of "expected" deaths in the coming year. Finally the "expectation of life" column shows the number of remaining years of life that can be expected at each age, given the 1970-72 mortality rates.

Table 4.47 also shows that the male probabilities of dying were higher than the corresponding female probabilities throughout the Table. Mortality rates and consequently the probabilities of dying were lowest at the age of about 10 for both sexes. Above this age, the male probabilities rose quite rapidly, reflecting accidents to teen-age boys; the female probability rose more gradually. Male mortality was fairly constant from the age of 20 up into the late 30s, and then increased steadily with advancing age. Female mortality rose slowly between the ages of 10 and 25 and then more rapidly for the remainder of the life period. It may be observed that about 11,200 of the male cohort would have died by age 50 as compared with roughly 6,600 of the corresponding female cohort, and that 58,575 males would reach age 70 as compared with 75,995 females.

Life expectancy values over the 1951-71 period are shown in Table 4.48. By 1971, Canadian life expectancy at birth had reached an all-time high of 69.3 years for males and nearly 76.4 years for females. These figures are roughly comparable to the expectancies of other countries with highly developed programs of medical care. Because of infant mortality, which is still quite substantial, life expectancies for male and female infants one year old were still slightly higher than expectancies at birth. Male expectancy at age 20 was 51.7 years, or 6.5 years below the corresponding female expectancy of 58.2. At age 40, the comparative expectancies were 33.2 for men and 39.0 for women. By age 65, the male expectancy had dropped to 13.7 years, with the female expectancy being about 3.8 years higher, at 17.5 years.

Table 4.49 shows the life expectancies for five Canadian regions for 1951 and 1961, and the corresponding expectancies by province for the 1966 and 1971 periods. The steady widening of the gap between male and female expectancies, very evident at the national level, still seems to be continuing in every province to judge from the 1966 and 1971 period figures. For the periods around the 1956 and 1961 censuses, the Prairie region showed the highest life expectancies, both male and female. Throughout the 1951-61 interval, Quebec life expectancies were the lowest, although they showed marked improvement over the decade.

In both the 1966 and 1971 periods, Saskatchewan life expectancies at birth were the highest among the provinces for males and females alike, and Quebec expectancies, although increasing, were still the lowest. In 1971, the Saskatchewan male expectancy at birth (71.1 years) was about 2.8 years above the corresponding Quebec expectancy of 68.3. For female expectancies at birth, Saskatchewan set an all-time record of 77.6, about 2.3 years above the corresponding Quebec expectancy of 75.3. All the 1971 life expectancies for selected ages in each of the four western provinces as given in Table 4.49 were above the national average, with the Saskatchewan rates being the highest in every case. Ontario male rates at the younger ages were around the Canadian average, dropping slightly below it for older men. Ontario female expectancies were fractionally above the national level. Quebec male expectancies at the young and middle ages were roughly a year below the national average, with the difference decreasing for older men 65 years and over. This statement also applies to the female expectancies for that province.

In the Atlantic provinces, 1971 life expectancies for the very young ages did not differ greatly from the national average except in the case of Nova Scotia for both males and

females, which were somewhat below it, and Prince Edward Island females which were above it. This was also true for the expectancies at 20 years of age. The male expectancies at 40 were clustered around the Canadian figure with Prince Edward Island a little higher and Nova Scotia slightly lower. Prince Edward Island showed a female expectancy at 40 which was a year above the national average, while Newfoundland and Nova Scotia were slightly below it. The Prince Edward Island expectancies at age 65 were again somewhat above the Canadian level with the male expectancies at 65 for the other Atlantic provinces clustered around it. The Newfoundland female expectancy at 65 was somewhat below the Canadian level.

4.8 Nuptiality

This Section includes not only recent statistics on marriages and marriage rates but also on dissolutions of marriages. In the *1973 Canada Year Book* pp 201-204, there was expanded coverage of the latter topic to focus attention on the dramatic increases over the past few years in the number of divorces resulting from the changes made in 1968 to Canada's divorce laws.

4.8.1 Marriages

In 1973, 199,064 marriages were solemnized in Canada. Table 4.50 shows that the rate of marriage was 9.0 per 1,000 population in 1973, down from 9.2 in 1972, reversing an upward trend which began in the early 1960s. There were similar slight declines in most provinces in this comparison. In 1973, New Brunswick recorded 9.8 marriages per 1,000 population which was the highest of any province.

Birthplace of brides and grooms. For Canada as a whole in 1973, Table 4.50 shows that 73.1% of the brides and 68.5% of the grooms were married in the province in which they were born; 11.7% of brides and 13.7% of grooms were married in a province other than that of their birth. Persons born outside Canada constituted 15.2% of the brides and 17.8% of the grooms. There were significant variations in these percentages among the various provinces. For example, British Columbia always has the highest proportion of brides and grooms marrying persons born in other provinces than the province in which the marriage is performed. In terms of marrying persons born outside Canada, Ontario and British Columbia are both relatively high.

As also illustrated in Table 4.50, proportionately more brides tend to marry in the province of their birth than do grooms. Further, it is of interest that the proportions of both brides and grooms marrying in the province of their birth are lowest in the territories, British Columbia, Alberta, Manitoba and Ontario. These are the regions which have generally been subject to the largest net inflows of population in recent years.

Age and marital status. Table 4.51 shows that in 1973 the great majority of brides and grooms at time of marriage reported their previous marital status as single, with divorced and widowed following in that order. A total of 174,135 or over 87% of all brides in 1973, and the same proportion of all grooms, had previously never been married. The proportion of brides marrying in 1973 who were previously divorced was 8.6%, and widowed, 3.9%.

In 1973 the median age at marriage — the age above and below which half the marriages occurred — was 23.5 for bachelors and 21.2 for spinsters. In terms of averages, bachelors averaged 24.9 years of age, and spinsters 22.4.

Religious denomination. Some indication of the influence that religion has in selecting marriage partners is shown in Table 4.52. For example, close to 62% of all marriages in 1973 were between persons of the same religious denomination. Percentages were higher for such denominations as Jewish and Roman Catholic and lower for others such as Anglican, Baptist, Presbyterian and United Church.

4.8.2 Divorces

The number of decrees absolute granted in Canada has risen sharply as a result of the 1968 changes in divorce legislation. For Canada as a whole the number of divorces (granted under the new legislation) rose to over 32,000 in 1972 as compared to an average of about 11,000 divorces over the three-year period 1966-68. Preliminary data for 1973 in Table 4.32 indicate a further increase to 36,704 decrees absolute granted in Canada. Table 4.32 also shows that in 1973 Alberta recorded a divorce rate of 263.5 per 100,000 population, and British

Columbia 245.7. These were the highest rates among the provinces. By comparison, Newfoundland and Prince Edward Island recorded the lowest rates, at 41.4 and 47.0, respectively.

Sex of petitioners. Table 4.53 shows that almost twice as many divorces were granted in 1973 to female petitioners (23,615), as to males (13,089). This represents a ratio of 55 divorces to male petitioners for every 100 to females. Among the provinces, Alberta showed the lowest ratio of male petitioners (36 to every 100 female) while British Columbia had the highest (62).

Grounds for divorce. A cause for divorce can be mentioned singly in a decree or in combination with others. Table 4.54 indicates that in 1973 "separation for not less than 3 years" was the most frequent cause of divorce, accounting for 33.1% of all causes reported. This was followed by adultery (30.3%), mental cruelty (15.8%), and physical cruelty (13.5%).

Dependent children. Of the 36,704 divorces in 1973 granted under the new legislation, 43.3% involved no dependent children. Table 4.55 shows a gradual increase since 1970 in the proportion of divorces involving dependent children from 53.1% in that year to 56.7% in 1973. Almost 40% of the latter cases involved one child only, and almost one third of them involved two children.

Duration of marriage. The duration of marriage in 16% of the divorces in Canada in 1973 was less than five years, and in 44% of the cases it was less than 10 years. The short-term trend over the past four years indicates a relative shortening of the average marriage period before divorce. For example, Table 4.56 shows that in 1970 only 13% of the divorces involved marriages of less than five years duration and 36.5% to those of less than 10 years. The median duration of marriage for 1970 divorces was 13.5 years, as compared to 11.8 for those in 1973.

Marital status. Table 4.57 shows that more than nine out of every 10 persons divorced in 1973 were single at the time of their marriage, i.e. representing a first divorce. Slightly over 5% of the divorces were to persons who were divorced at the time of their last marriage, and about 2% to those who were widowed.

4.9 Migration

The preceding Sections 4.5 to 4.8 were concerned with the vital components of population change (fertility, mortality, nuptiality). In addition to these factors, there are the flows of population across national borders (immigration and emigration) which also affect the country's growth and demographic structure. This Section provides recent data on the numbers and characteristics of immigrants entering Canada (Tables 4.58 to 4.64), as well as estimates of the numbers of emigrants leaving (Table 4.65). The relative influence of net migration (the excess of immigrants over emigrants) compared to natural increase (the excess of births over deaths) in past growth rates of Canada over the period 1851-1971 is shown in Table 4.2.

The subject of internal migration within Canada is discussed briefly in this Section, and some estimates of total net migration by province in the 1961-71 period can be observed from Table 4.5. Demographic studies resulting from the 1971 Census will provide detailed analyses of the most recent trends on internal migration flows within Canada as did the monographs from the 1961 Census relating to the preceding decade. Brief summary data from the 1971 Census on this subject are provided in Tables 4.66 to 4.68.

4.9.1 Immigration

The extent of immigration to Canada in any period is affected both by domestic conditions and by conditions abroad. A discussion of these factors, together with an analysis of recent trends, may be found in the *1972 Canada Year Book* pp 222-225. The numbers of immigrant arrivals for each year over the period 1947-73 are shown in Table 4.58 of the present edition.

Origin of immigrants. In 1973 Canada received 184,200 immigrants from various countries of origin, an increase of 62,194 or 51% from the 1972 total of 122,006. A portion of the increase was attributed to those persons granted landed status under the Adjustment of Status Program. Tables 4.59 and 4.60, showing the country of last permanent residence and of citizenship of immigrants, respectively, indicate that by world area the continents of Europe, Africa, the Americas, and Australasia contributed a lower proportion of the total immigration

stream in 1973 than in the previous year. On the other hand, there was an increased percentage of immigrants from Asia and South America.

The United Kingdom was the largest source area for immigrants with 26,973 in 1973, followed by the United States with 25,242.

Destination of immigrants. Upon arrival in Canada, immigrants are asked to state their intended destinations. According to these records, Ontario absorbed by far the highest proportion of arrivals during 1973 — 56.0% of both the males and the females. British Columbia was the second most-favoured province of destination, receiving 15.0% of the males and 15.4% of the females, followed by Quebec with 14.6% of the males and 14.5% of the females. The proportions intending to settle in the Prairie provinces were 11.3% for males and 10.8% for females, and in the Atlantic provinces, 3.0% for both males and females. The provincial distribution as shown in Table 4.61 for 1972 and 1973 has changed little from year to year over the past two decades.

Sex, age and marital status. The sex distribution of immigrants for 1970-73 is shown in Table 4.62. In the five years 1969-73 adult males constituted 37.2% of the immigrants, adult females 37.9%, and children under 18 years of age the remaining 24.9%.

The number of female immigrants coming into Canada was higher than the number of male immigrants in every year from 1957 to 1964; since then, with the exception of 1969, 1971 and 1972, the trend has been in favour of males. In 1973, there was an excess of 5,336 males over females. Single males as shown in Table 4.63 surpassed single females by 11,859, but in all ever-married categories women outnumbered men: married females exceeded married males by 2,081; there were 4,291 widows compared to 645 widowers; divorcees outnumbered divorced men by 450; and separated females were 886 to 540 males. Of the total immigration for 1973 of persons 15 years of age and over, 34.6% were single, 39.6% married, and 4.6% were widowed, divorced or separated.

Intended occupations. Some 92,228 persons were added to the labour force in 1973 compared with 59,432 in 1972. The remainder — those not destined for the labour force — were largely dependents of immigrants or close relatives sponsored by individuals in Canada. Skilled immigrants continued to fill shortages of qualified people in certain areas, thus providing essential services to the Canadian public. For example, Table 4.64 shows that in 1973 Canada admitted 1,170 physicians and surgeons, 72 dentists, 811 medical and dental technicians and 1,868 other professionals in the health services field. Similarly, the labour force attracted 2,014 professional engineers (civil, mechanical, electrical, mining, etc.).

Next to professional and technical occupations, the second largest group consisted of immigrants intending to work in the manufacturing and mechanical trades. Chief among these were tailors and furriers (5,448), mechanics and repairmen (4,241), and machinists (5,624). Other large occupational classes in 1973 were stenographers and typists (5,122) in the clerical group, domestic servants (4,618) in the service group, and farmers and farm workers (3,068) in the primary industry group.

4.9.2 Emigration

Emigration from Canada is a factor tending to offset to some extent present and past immigration activities. The major outward movement has always, of course, been to the United States and that movement, both of native-born Canadians and of Europeans who originally migrated to Canada, has attained considerable proportions at certain periods. No Canadian statistics on emigration are available but Table 4.65 gives figures taken from the annual reports of the Immigration and Naturalization Service of the United States Department of Justice. These figures show the numbers of persons entering the United States from Canada during the years ended June 30, 1965-74 with the expressed intention of establishing permanent residence in that country. They do not include persons travelling for pleasure, even for extended periods of time, holders of border-crossing cards (normally issued to persons living in border areas of Canada but working in the United States) or casual tourist crossings in these same areas.

Of the 7,654 Canadian-born persons entering the United States in the year ended June 30, 1974 with the intention of remaining permanently, 3,360 were males and 4,294 females. Approximately one fifth, or 1,563, of the total native-born emigrants were males in the

productive age group, 20-59 years. By occupation, the largest group of the total of 7,654 native-born persons was the professional or technical group which numbered 904; clerical and kindred workers numbered 383; and craftsmen and kindred workers numbered 307. On the other hand 5,057 persons, or 66.1% of the total, were classed as housewives, children and others with no reported occupation. Altogether, 42.2% of the total were persons under 20 years of age.

Of the 12,301 persons entering the United States from Canada claiming Canada as country of last permanent residence — which of course includes native-born persons and those born in other countries who have resided in Canada — the Immigration and Naturalization Service of the United States Department of Justice lists 1,970 as professional, technical and kindred workers; 709 as craftsmen, foremen and kindred workers; and 616 as clerical and kindred workers. Housewives, children and others not in the labour force amounted to 6,803 or 55.3% of the total.

4.9.3 Internal migration

As people move from one place of residence to another within the nation's borders, they set up varying patterns of migration which differ in intensity and directional flow. These internal movements have marked effects on regional economies, and they exert an influence on future population growth. Thus it is important that attempts be made to measure these various migration streams, such as from rural countryside to urban centres, from cities to suburbs, from one province or economic region to another, and so on.

Migration by province of birth. Census figures on birthplace (province of birth) are able to shed some light on internal migration flows, by comparing the numbers of persons born in a given province with their province of present residence. However, such figures give no indication of the periodicity of the migrating process, and they apply only to the Canadian-born population presently living in a given province. Nevertheless, they do reflect something of the accumulated results of the major patterns of interprovincial movement of native-born persons over the years.

Data from the 1971 Census in Table 4.66 show that Ontario, Alberta and British Columbia have been net gainers in recent years of Canadian-born migrants from other provinces, while the remaining provinces have been net losers. Newfoundland and Quebec showed relatively the fewest numbers of their 1971 population as having been born in another province (3.3% and 4.6%, respectively), while British Columbia showed the highest (37.4%). These percentages reflect low rates of Canadian-born in-migrants to the former two provinces, and a high rate to the latter one. On the other hand, Saskatchewan-born persons were the most likely to be found living in a province other than that of their birth (40.0%), while Quebec-born and Ontario-born persons were the least likely (6.1% and 7.4%, respectively). This reflects a high rate of out-migration of native-born persons from the former province, and low rates from the latter two.

Migration by residence five years ago. Perhaps the most useful estimates on internal migration are those resulting from the inclusion in national censuses of questions which seek to determine the exact place of residence of each person at the date of the preceding census five years earlier. From a comparison with the location of their present residence, it is possible to estimate the size, directional flows and characteristics of the migrating population over the period. Such questions were included in both the 1961 and 1971 censuses of Canada. Migration trends in recent years as revealed by the 1961 Census were issued in monographs (see Catalogue Nos. 99-548 and 99-557) and other studies (see Catalogue No. 99-513). A few basic summary results of the 1971 Census, which included questions on place of residence five years earlier at June 1, 1966, are presented in Tables 4.67 and 4.68.

The migration status of the population in 1971 in terms of residence in 1966 is summarized in Table 4.67. It shows that almost one half (47.4%) of Canada's population five years of age and over in 1971 were living in a different home than five years earlier. A total of 23.5% had moved within the same municipality, while 23.9% had moved from one municipality to another. The latter group consisted of 14.0% who were movers within the same province, 4.3% from one province to another, and 4.2% from outside Canada. Ontario was the most favoured province of destination for in-migrants from other provinces and from outside Canada. A total of 40.6% of all 1966-71 interprovincial migrants and immigrants from abroad

were living in Ontario in 1971. British Columbia was next, receiving 18.4% of these migrants, followed by Quebec (12.9%) and Alberta (11.2%).

Migration by type of locality. Table 4.68 compares the type of locality of residence on June 1, 1966 and June 1, 1971 for migrants who had moved from one municipality to another between these two dates. Metropolitan areas constituted the favourite destination of these migrants, as well as being the major locality of origin. A total of 58.0% of all migrants moved to a municipality within a metropolitan area, (including those moving from one municipality to another within the same metropolitan area). Immigrants from outside Canada showed the greatest propensity to locate in a metropolitan area, and this was the destination of 80.9% of their numbers. By locality of origin, 44.6% of the 1966-71 migrants residing in metropolitan areas in 1971 were also living in a metropolitan area in 1966 (i.e. in a different municipality of the same or other metropolitan area), 15.2% were from other urban localities, 9.7% from rural areas, and 24.3% were from outside Canada.

Only about 217,000 or 4.6% of all 1966-71 migrants had been living in predominantly farm localities in 1966 before moving. However, this figure represented over 10% of the total farm population. One third (32.8%) of these movers from farm localities were living in metropolitan areas in 1971, over one half (54.2%) in other urban or rural non-farm localities, and only 13.0% in predominantly farm areas. The actual decline in the rural farm population of all ages (i.e. the total population living on farms in all rural localities) was from 1.9 million in 1966 to 1.4 million in 1971 (see Section 4.2.3 and Table 4.11).

Sources

- 4.1 Population Estimates and Projections Division, Census Field, Statistics Canada. The early growth of Canada's population is analyzed in more detail in Vol. I of the 1931 Census; other accounts of growth prior to the present century are contained in: Vol. I, 1941; Vol. X, 1951; Bulletin 7.1-1 (Catalogue No. 99-511), 1961; and Bulletin 5.1-1 (Catalogue No. 99-701), 1971. More detailed accounts of recent population growth are available in the *Canada Year Book*, 1969 edition pp 153-165, 1970-71 edition pp 210-220, and in above census reports 99-511 and 99-701.
- 4.2 - 4.3.3 Census Characteristics Division, Census Field, Statistics Canada; except 1973 population estimates for provinces, metropolitan areas, and age groups provided by Population Estimates and Projections Division of Census Field.
- 4.3.4 Statistics Division, Program Analysis and Management Services Branch, Department of Indian Affairs and Northern Development.
- 4.4 Census Characteristics Division, Census Field, Statistics Canada.
- 4.5 - 4.8 Health and Welfare Division, Household and Institutional Statistics Field, Statistics Canada.
- 4.9.1 Canada Immigration Division, Department of Manpower and Immigration.
- 4.9.2 Population Estimates and Projections Division, Census Field, Statistics Canada.
- 4.9.3 Census Characteristics Division, Census Field, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed		certain tables may not add due to rounding

All figures of the 1971 Census in Tables 4.11 to 4.13, 4.15 to 4.21, and 4.23 to 4.31, have been subjected to a confidentiality procedure to prevent the possibility of associating small figures with an identifiable individual. The particular technique used is known as "random rounding". Under this method, all last or "unit" digits in a table (including all totals) are randomly rounded (either up or down) to "0" or "5". This technique provides the strongest possible protection against direct, residual, or negative disclosures without adding any significant error to the census data. However, since totals are independently rounded they do not necessarily equal the sum of individual rounded figures in distributions. Also, minor differences can be expected for corresponding totals and cell values in various census tabulations.

4.1 Growth of the population of Canada, 1851-1971

Census year	Population No.	Increase during intercensal period		Average annual rate of population growth %
		No.	%	
1851	2,436,297			
1861	3,229,633	793,336	32.6	2.9
1871	3,689,257	459,624	14.2	1.3
1881	4,324,810	635,553	17.2	1.6
1891	4,833,239	508,429	11.8	1.1
1901	5,371,315	538,076	11.1	1.1
1911	7,206,643	1,835,328	34.2	3.0
1921	8,787,949	1,581,306	21.9	2.0
1931	10,376,786	1,588,837	18.1	1.7
1941	11,506,655	1,129,869	10.9	1.0
1951 ¹	14,009,429	2,502,774	21.8	1.7
1961	18,238,247	4,228,818	30.2	2.7
1971	21,568,311	3,330,064	18.3	1.7

¹1951 Census figures include Newfoundland for the first time. Excluding Newfoundland the increase would have been 2,141,358 or 18.6%.

4.2 Growth components of Canada's population, 1851-1971

Period	Total popu- lation growth '000	Births '000	Deaths '000	Natural increase '000	Ratio of natural increase to total growth %	Immi- gration '000	Emi- gration '000	Net mi- gration '000	Ratio of net mi- gration to total growth %
1851-1861	793	1,281	670	611	77.0	352	170	182	23.0
1861-1871	460	1,370	760	610	132.6	260	410	-150	-32.6
1871-1881	636	1,480	790	690	108.5	350	404	-54	-8.5
1881-1891	508	1,524	870	654	128.7	680	826	-146	-28.7
1891-1901	538	1,548	880	668	124.2	250	380	-130	-24.2
1901-1911	1,835	1,925	900	1,025	55.9	1,550	740	810	44.1
1911-1921	1,581	2,340	1,070	1,270	80.3	1,400	1,089	311	19.7
1921-1931	1,589	2,420	1,060	1,360	85.5	1,200	970	230	14.5
1931-1941	1,130	2,294	1,072	1,222	108.1	149	241	-92	-8.1
1941-1951 ¹	2,503	3,212	1,220	1,992	92.3	1,548	382	166	7.7
1951-1961	4,228	4,468	1,320	3,148	74.5	1,543	463	1,080	25.5
1961-1971	3,330	4,105	1,497	2,608	78.3	1,429	707	722	21.7

¹Includes Newfoundland in 1951 but not in 1941.

4.3 Projected population of Canada up to 2001

Year	Population as at June 1 '000	Annual rate of population growth %	Distribution by age			
			0-19 %	20-44 %	45-64 %	65+ %
Projection A ¹						
1971	21,568.3	...	39.4	33.9	18.6	8.1
1976	23,086.1	1.4	36.1	36.4	18.9	8.6
1981	25,311.5	1.8	34.3	38.6	18.1	9.0
1986	27,810.9	1.9	33.9	39.6	17.2	9.3
1991	30,177.6	1.6	34.9	38.1	17.2	9.8
1996	32,347.1	1.4	35.6	36.2	18.3	9.9
2001	34,611.4	1.3	34.6	35.4	20.2	9.8
Projection B ²						
1971	21,568.3	...	39.4	33.9	18.6	8.1
1976	22,846.3	1.2	35.9	36.4	19.1	8.6
1981	24,472.5	1.4	33.2	38.9	18.6	9.3
1986	26,258.6	1.4	31.6	40.5	18.1	9.8
1991	27,902.1	1.2	31.8	39.6	18.2	10.4
1996	29,317.0	1.0	31.8	37.7	19.7	10.8
2001	30,655.5	0.9	30.8	36.4	21.9	10.9

4.3 Projected population of Canada up to 2001 (concluded)

Year	Population as at June 1 '000	Annual rate of population growth %	Distribution by age			
			0-19 %	20-44 %	45-64 %	65+ %
Projection C*						
1971	21,568.3	...	39.4	33.9	18.6	8.1
1976	22,772.4	1.1	35.7	36.5	19.1	8.7
1981	24,041.4	1.1	32.0	39.6	19.0	9.4
1986	25,382.9	1.1	29.3	41.9	18.7	10.1
1991	26,591.4	0.9	28.4	41.5	19.1	11.0
1996	27,569.7	0.7	27.8	39.8	20.9	11.5
2001	28,369.7	0.6	26.7	37.9	23.6	11.8

The above figures represent new series of projections replacing those in the 1974 *Canada Year Book* (see text in Section 4.1.3).

*Projection A assumptions: total fertility will change from 2.19 children in 1971 to 2.60 by 1985 and then remain constant through 2001; net migration gain of 100,000 per year; and expectation of life at birth will increase gradually to 70.2 years for males and 78.4 for females by 1986 and then remain constant through 2001.

*Projection B assumptions: total fertility will change to 2.20 children by 1985 and then remain constant through 2001; net migration gain of 60,000 per year; and mortality same as Projection A.

*Projection C assumptions: total fertility will change to 1.80 children by 1985 and then remain constant through 2001; net migration is same as Projection B; and mortality is same as Projection A.

4.4 Population and percentage change of population, by province, 1951-71

Province or territory	Population and percentage change				
	Population				
	1951	1956	1961	1966	1971
Newfoundland	361,416	415,074	457,853	493,396	522,104
Prince Edward Island	98,429	99,285	104,629	108,535	111,641
Nova Scotia	642,584	694,717	737,007	756,039	788,960
New Brunswick	515,697	554,616	597,936	616,788	634,557
Quebec	4,055,681	4,628,378	5,259,211	5,780,845	6,027,764
Ontario	4,597,542	5,404,933	6,236,092	6,960,870	7,703,106
Manitoba	776,541	850,040	921,686	963,066	988,247
Saskatchewan	831,728	880,665	925,181	955,344	926,242
Alberta	939,501	1,123,116	1,331,944	1,463,203	1,627,874
British Columbia	1,165,210	1,398,464	1,629,082	1,873,674	2,184,621
Yukon Territory	9,096	12,190	14,628	14,382	18,388
Northwest Territories	16,004	19,313	22,998	28,738	34,807
Canada	14,009,429	16,080,791	18,238,247	20,014,880	21,568,311
	Percentage change				Average annual change
	1951-56	1956-61	1961-66	1966-71	1951-71
Newfoundland	14.8	10.3	7.8	5.8	1.9
Prince Edward Island	0.9	5.4	3.7	2.9	0.6
Nova Scotia	8.1	6.1	2.6	4.4	1.0
New Brunswick	7.5	7.8	3.2	2.9	0.9
Quebec	14.1	13.6	9.9	4.3	0.8
Ontario	17.6	15.4	11.6	10.7	2.6
Manitoba	9.5	8.4	4.5	2.6	1.2
Saskatchewan	5.9	5.1	3.3	-3.0	0.5
Alberta	19.5	18.6	9.9	11.2	2.8
British Columbia	20.0	16.5	15.0	16.6	3.2
Yukon Territory	34.0	20.0	-1.7	27.8	3.6
Northwest Territories	20.7	19.1	25.0	21.1	4.0
Canada	14.8	13.4	9.7	7.8	2.2

4.5 Components of population change, by province, 1961-66 and 1966-71

Province or territory	Total population change		Natural increase		Net migration	
	1961-66	1966-71	1961-66	1966-71	1961-66	1966-71
Newfoundland	35,543	28,708	59,577	49,096	-24,034	-20,388
Prince Edward Island	3,906	3,106	8,506	5,207	-4,600	-2,101
Nova Scotia	19,032	32,921	59,526	37,418	-40,494	-4,497
New Brunswick	18,852	17,769	53,229	35,233	-34,377	-17,464
Quebec	521,634	246,919	457,717	288,727	63,917	-41,808
Ontario	724,778	742,236	487,852	373,072	236,926	369,164
Manitoba	41,380	25,181	70,340	49,260	-28,960	-24,079
Saskatchewan	30,163	-29,102	75,691	50,867	-45,528	-79,969
Alberta	131,259	164,671	134,607	105,293	-3,348	59,378
British Columbia	244,592	310,947	104,103	88,494	140,489	222,453
Yukon Territory and Northwest Territories	5,494	10,075	6,745	6,720	-1,251	3,355
Canada	1,776,633	1,553,431	1,517,893	1,089,387	258,740	464,044

4.6 Annual estimates of population, by province, as at June 1, 1966-74 (thousands)

Province or territory	Census 1966	Estimates 1967-70				Census 1971	Estimates 1972-74		
		1967	1968	1969	1970		1972	1973	1974
Nfld.	493	499	506	514	517	522	532	541	542
PEI	109	109	110	111	110	112	113	115	117
NS	756	760	767	775	782	789	794	805	813
NB	617	620	625	628	627	635	642	652	662
Que.	5,781	5,864	5,928	5,985	6,013	6,028	6,059	6,081	6,134
Ont.	6,961	7,127	7,262	7,385	7,551	7,703	7,825	7,939	8,094
Man.	963	963	971	979	983	988	992	998	1,011
Sask.	955	957	960	958	941	926	916	908	907
Alta.	1,463	1,490	1,524	1,559	1,595	1,628	1,655	1,683	1,714
BC	1,874	1,945	2,003	2,060	2,128	2,185	2,247	2,315	2,395
YT	14	15	15	16	17	18	19	20	19
NWT	29	29	30	31	33	35	36	38	38
Canada	20,015	20,378	20,701	21,001	21,297	21,568	21,830	22,095	22,446

4.7 Populations of incorporated cities, towns and villages classified by size group, 1961, 1966 and 1971

Size group	1961			1966			1971		
	Incor- porated centres	Popu- lation	% of total popu- lation	Incor- porated centres	Popu- lation	% of total popu- lation	Incor- porated centres	Popu- lation	% of total popu- lation
Over 500,000	2	1,863,469	10.2	2	1,886,839	9.4	2	1,927,138	8.9
Between									
400,000 and 500,000	—	—	—	1	410,375	2.1	3	1,267,727	5.9
300,000 and 400,000	—	384,522	2.1	2	707,500	3.5	2	611,514	2.8
200,000 and 300,000	5	1,338,294	7.3	3	845,867	4.2	4	900,778	4.2
100,000 and 200,000	4	568,056	3.1	6	997,051	5.0	8	1,060,048	4.9
50,000 and 100,000	17	1,134,214	6.2	26	1,740,446	8.7	26	1,870,435	8.7
25,000 and 50,000	41	1,431,909	7.9	43	1,438,388	7.2	49	1,633,969	7.6
15,000 and 25,000	43	862,101	4.7	52	1,019,205	5.1	59	1,150,768	5.3
10,000 and 15,000	61	743,474	4.1	65	781,611	3.9	55	675,748	3.1
5,000 and 10,000	132	932,936	5.1	125	898,136	4.5	144	1,028,412	4.8
3,000 and 5,000	151	579,201	3.2	165	637,117	3.2	173	670,537	3.1
1,000 and 3,000	465	793,465	4.4	471	818,003	4.1	502	866,086	4.0
Under 1,000	1,039	437,207	2.4	1,057	445,246	2.2	1,093	451,810	2.1
Total	1,961	11,068,848	60.7	2,018	12,625,784	63.1	2,120	14,114,970	65.4

4.8 Population of incorporated cities and towns of 50,000 and over, 1961, 1966 and 1971

Incorporated city or town	Year of incor- poration	1961	1966	1971
Brantford, Ont.	1877	55,201	59,854 *	64,421
Burlington, Ont.	1915	47,008	65,941 *	87,023
Calgary, Alta.	1893	249,641	330,575 *	403,319 *
Dartmouth, NS	1961	46,966	58,745	64,770
Edmonton, Alta.	1904	281,027	376,925 *	438,152 *
Guelph, Ont.	1879	39,838	51,377 *	60,087 *
Halifax, NS	1841	92,511	86,792	122,035 *
Hamilton, Ont.	1846	273,991	298,121 *	309,173
Hull, Que.	1875	56,929	60,176 *	63,580 *
Kingston, Ont.	1846	53,526	59,004	59,047 *
Kitchener, Ont.	1912	74,485	93,255 *	111,804 *
LaSalle, Que.	1958	30,904	48,322	72,912
Laval, Que.	1965	124,741	196,088	228,010
London, Ont.	1855	169,569	194,416	223,222 *
Longueuil, Que.	1920	24,131	25,593	97,590 *
Mississauga, Ont.	1968	62,616	93,492 *	156,070 *
Montreal, Que.	1832	1,191,062	1,222,255 *	1,214,352 *
Montreal N., Que.	1959	48,433	67,806	89,139 *
Niagara Falls, Ont.	1903	22,351	56,891 *	67,163 *
Oakville, Ont.	1857	10,366	52,793 *	61,483 *
Oshawa, Ont.	1924	62,415	78,082	91,587
Ottawa, Ont.	1854	268,206	290,741	302,341
Peterborough, Ont.	1905	47,185	56,177 *	58,111 *
Quebec, Que.	1832	171,979	166,984	186,088 *
Regina, Sask.	1903	112,141	131,127 *	139,469 *
Saint John, NB	1785	55,153	51,567	89,039 *
St. Catharines, Ont.	1876	84,472	97,101 *	109,722 *
Ste-Foy, Que.	1955	29,716	48,298 *	68,385 *
St. James-Assiniboia, Man.	1969	44,434	59,255 *	71,431 *
St. John's, Nfld.	1888	63,633	79,884 *	88,102 *
St-Laurent, Que.	1955	49,805	59,479 *	62,955 *
St-Léonard, Que.	1963	4,893	25,328	52,040 *
Sarnia, Ont.	1914	50,976	54,552 *	57,644
Saskatoon, Sask.	1906	95,526	115,892 *	126,449 *
Sault Ste Marie, Ont.	1912	43,088	74,594 *	80,332
Sherbrooke, Que.	1875	66,554	75,690 *	80,711
Sudbury, Ont.	1930	80,120	84,888 *	90,535
Thunder Bay, Ont.	1970	98,671	104,539	108,411

4.8 Population of incorporated cities and towns of 50,000 and over, 1961, 1966 and 1971 (concluded)

Incorporated city or town	Year of incorporation	1961	1966	1971
Toronto, Ont.	1834	672,407	664,584	712,786 *
Trois-Rivières, Que.	1857	53,477	57,540 *	55,869
Vancouver, BC	1886	384,522	410,375	426,256
Verdun, Que.	1912	78,317	76,832	74,718
Victoria, BC	1862	54,941	57,453	61,761
Windsor, Ont.	1892	114,367	192,544 *	203,300 *
Winnipeg, Man.	1873	265,429	257,005 *	246,246

*Indicates a boundary change since the preceding census. Population totals in these cases are based on a different area, i.e. the boundaries at that particular census year.

4.9 Population of census metropolitan areas (based on 1971 boundaries) 1951-71, and estimates for 1973

Census metropolitan area	1951	1956	1961	1966	1971	1973 (estimate)
Calgary	142,315	201,022	279,062	330,575	403,319	431,000
Chicoutimi-Jonquière	91,161	110,317	127,616	132,954	133,703	136,000
Edmonton	193,622	275,182	359,821	425,370	495,702	518,000
Halifax	138,427	170,481	193,353	209,901	222,637	222,000
Hamilton	281,901	341,513	401,071	457,410	498,523	513,000
Kitchener	107,474	128,722	154,864	192,275	226,846	235,000
London	167,724	196,338	226,669	253,701	286,011	293,000
Montreal	1,539,308	1,833,232	2,215,627	2,570,982	2,743,208	2,775,000
Ottawa-Hull	311,587	367,756	457,038	528,774	602,510	619,000
Quebec	289,294	328,405	379,067	436,918	480,502	493,000
Regina	72,731	91,215	113,749	132,432	140,734	147,000
Saint John, NB	80,689	88,375	98,083	104,195	106,744	110,000
St. Catharines-Niagara	189,046	233,034	257,796	285,453	303,429	308,000
St. John's, Nfld.	80,869	92,565	106,666	117,533	131,814	133,000
Saskatoon	55,679	72,930	95,564	115,900	126,449	128,000
Sudbury	80,543	107,889	127,446	136,739	155,424	155,000
Thunder Bay	73,713	87,624	102,085	108,035	112,093	113,000
Toronto	1,261,861	1,571,952	1,919,409	2,289,900	2,628,043	2,692,000
Vancouver	586,172	694,425	826,798	933,091	1,082,352	1,116,000
Victoria	114,859	136,127	155,763	175,262	195,800	203,000
Windsor	182,619	208,456	217,215	238,323	258,643	264,000
Winnipeg	357,229	412,741	476,543	508,759	540,262	560,000

4.10 Land area and density of population, by province, 1951-71

Province or territory	Land area sq miles	Population per sq mile				
		1951	1956	1961	1966	1971
Newfoundland	143,045	2.53	2.90	3.20	3.45	3.65
Prince Edward Island	2,184	45.07	45.46	47.91	49.70	51.11
Nova Scotia	20,402	31.50	34.05	36.12	37.06	38.67
New Brunswick	27,835	18.53	19.93	21.48	22.16	22.80
Quebec	523,860	7.74	8.84	10.04	11.04	11.50
Ontario	344,092	13.36	15.71	18.12	20.23	22.39
Manitoba	211,775	3.67	4.01	4.35	4.55	4.66
Saskatchewan	220,182	3.78	4.00	4.20	4.34	4.21
Alberta	248,800	3.78	4.51	5.35	5.88	6.54
British Columbia	359,279	3.24	3.89	4.53	5.22	6.08
Canada (excl. the territories)	2,101,454	6.65	7.64	8.66	9.50	10.24
Yukon Territory	205,346	0.04	0.06	0.07	0.07	0.09
Northwest Territories	1,253,438	0.01	0.02	0.02	0.02	0.03
Canada	3,560,238	3.93	4.52	5.12	5.62	6.06

4.11 Number and percentage of the population classified as urban, and rural by non-farm and farm, by province, 1971

Province or territory	Urban		Rural		Farm		Total		Total population
	No.	%	No.	%	No.	%	No.	%	
Newfoundland	298,800	57.2	218,775	41.9	4,525	0.9	223,305	42.8	522,105
Prince Edward Island	42,780	38.3	47,725	42.7	21,130	18.9	68,860	61.7	111,640
Nova Scotia	447,400	56.7	315,290	40.0	26,270	3.3	341,555	43.3	788,960
New Brunswick	361,145	56.9	247,845	39.1	25,565	4.0	273,410	43.1	634,555
Quebec	4,861,240	80.6	861,215	14.3	305,300	5.1	1,166,520	19.4	6,027,765
Ontario	6,343,630	82.4	995,840	12.9	363,640	4.7	1,359,475	17.6	7,703,105
Manitoba	686,445	69.5	171,390	17.3	130,410	13.2	301,800	30.5	988,245
Saskatchewan	490,630	53.0	202,280	21.8	233,335	25.2	435,610	47.0	926,240
Alberta	1,196,250	73.5	195,590	12.0	236,025	14.5	431,620	26.5	1,627,875
British Columbia	1,654,405	75.7	456,700	20.9	73,520	3.4	530,215	24.3	2,184,620
Yukon Territory	11,215	61.0	7,120	38.7	55	0.3	7,170	39.0	18,390
Northwest Territories	16,830	48.4	17,955	51.6	25	0.1	17,980	51.7	34,805
Canada	16,410,785	76.1	3,737,730	17.3	1,419,795	6.6	5,157,525	23.9	21,568,310

4.12 Sex distribution of the population, by province, 1971 and sex ratios, 1961, 1966 and 1971

Province or territory	Population, 1971		Males to 100 females		
	Male	Female	1961	1966	1971
Newfoundland	266,110	256,000	105	104	104
Prince Edward Island	56,225	55,415	104	103	101
Nova Scotia	396,470	392,495	103	101	101
New Brunswick	319,420	315,135	102	101	101
Quebec	2,994,550	3,033,215	100	100	99
Ontario	3,840,910	3,862,200	101	100	99
Manitoba	494,610	493,635	103	101	100
Saskatchewan	470,720	455,515	108	105	103
Alberta	827,785	800,090	107	104	103
British Columbia	1,100,375	1,084,250	104	103	101
Yukon Territory	9,920	8,470	127	119	117
Northwest Territories	18,280	16,530	126	118	111
Canada	10,795,370	10,772,945	102	101	100

4.13 Age distribution of the population, 1961, 1966 and 1971

Age group	Number			Percentage		
	1961	1966	1971	1961	1966	1971
0- 4 years	2,256,401	2,197,387	1,816,155	12.4	11.0	8.4
5- 9 "	2,079,522	2,300,857	2,254,005	11.4	11.5	10.4
10-14 "	1,855,999	2,093,513	2,310,740	10.2	10.5	10.7
15-19 "	1,432,559	1,837,725	2,114,345	7.9	9.2	9.8
20-24 "	1,183,646	1,461,298	1,889,400	6.5	7.3	8.8
25-29 "	1,209,297	1,241,794	1,584,125	6.6	6.2	7.3
30-34 "	1,271,810	1,241,697	1,305,425	7.0	6.2	6.1
35-39 "	1,270,924	1,286,144	1,263,870	7.0	6.4	5.9
40-44 "	1,118,961	1,257,028	1,262,530	6.1	6.3	5.9
45-49 "	1,015,316	1,089,915	1,239,040	5.6	5.4	5.7
50-54 "	863,188	988,264	1,052,540	4.7	4.9	4.9
55-59 "	705,835	816,300	954,725	3.9	4.1	4.4
60-64 "	583,635	663,410	777,020	3.2	3.3	3.6
65-69 "	487,102	531,709	619,960	2.7	2.7	2.9
70-74 "	402,175	427,207	457,380	2.2	2.1	2.1
75-79 "	274,237	300,365	325,510	1.5	1.5	1.5
80-84 "	146,817	177,319	204,170	0.8	0.9	0.9
85-89 "	60,784	76,790	100,010	0.3	0.4	0.5
90 years and over	20,039	26,158	37,380	0.1	0.1	0.2
Total	18,238,247	20,014,880	21,568,310	100.0	100.0	100.0

4.14 Estimated population by age group and sex, by province, as at June 1, 1974 (thousands)

Province or territory	Age group and sex							
	0-4 years		5-9 years		10-14 years		15-19 years	
	Male	Female	Male	Female	Male	Female	Male	Female
Newfoundland	31.2	29.6	32.6	31.5	33.9	32.3	32.2	31.2
Prince Edward Island	5.2	4.8	5.6	5.5	6.7	6.5	6.5	6.3
Nova Scotia	34.9	33.3	38.3	36.5	44.6	42.7	43.7	41.4
New Brunswick	30.0	28.6	32.3	30.9	38.0	36.1	38.2	36.3
Quebec	221.9	209.7	273.1	260.1	335.7	322.0	335.4	323.5
Ontario	326.7	310.3	356.9	339.6	419.2	398.8	395.5	379.8
Manitoba	43.6	41.6	44.8	43.2	52.5	50.0	50.3	48.5
Saskatchewan	36.8	35.1	41.1	39.3	50.5	48.6	50.4	48.2
Alberta	76.9	72.8	82.2	78.8	97.2	93.3	90.7	86.0
British Columbia	94.5	90.4	102.1	97.6	120.8	115.6	116.1	111.9
Yukon Territory	1.2	1.1	1.1	1.0	1.2	1.1	0.9	0.8
Northwest Territories	3.0	2.7	2.8	2.6	2.5	2.4	1.8	1.7
Canada	905.8	860.0	1,012.9	966.5	1,202.8	1,149.3	1,161.6	1,115.5
	20-24 years		25-34 years		35-44 years		45-54 years	
	Male	Female	Male	Female	Male	Female	Male	Female
Newfoundland	26.2	25.7	35.2	34.7	25.8	23.9	23.5	21.6
Prince Edward Island	5.3	5.3	7.3	7.2	5.8	5.4	5.2	5.3
Nova Scotia	38.1	36.3	56.6	55.1	41.7	40.8	39.8	41.3
New Brunswick	32.5	32.0	45.4	43.1	32.0	31.8	31.1	32.1
Quebec	293.0	290.7	480.5	481.2	357.2	356.6	322.3	335.6
Ontario	355.3	354.4	625.0	613.5	488.1	466.7	455.9	461.1
Manitoba	46.0	45.6	71.2	69.5	52.8	50.8	52.3	55.2
Saskatchewan	40.6	38.4	51.4	50.5	45.1	43.8	49.7	49.4
Alberta	76.9	76.4	128.5	126.6	102.3	95.0	88.9	86.5
British Columbia	106.2	103.5	188.5	180.9	145.1	131.7	130.7	131.5
Yukon Territory	0.7	0.7	2.1	1.8	1.4	1.0	1.0	0.8
Northwest Territories	1.5	1.5	3.3	3.0	2.2	1.8	1.4	1.1
Canada	1,022.2	1,010.5	1,694.9	1,667.1	1,299.4	1,249.5	1,201.9	1,221.6

4.14 Estimated population by age group and sex, by province, as at June 1, 1974 (thousands) (concluded)

Province or territory	Age group and sex							
	55-64 years		65-69 years		70+ years		All ages	
	Male	Female	Male	Female	Male	Female	Male	Female
Newfoundland	19.7	17.7	6.1	5.9	9.9	12.2	276.2	266.3
Prince Edward Island	5.0	5.0	1.9	2.0	3.8	5.2	58.4	58.4
Nova Scotia	35.4	36.2	13.0	13.3	21.1	29.1	407.1	406.1
New Brunswick	26.4	26.9	9.7	10.2	16.5	21.9	331.9	329.9
Quebec	230.4	251.6	80.2	95.5	113.3	164.6	3,043.1	3,091.2
Ontario	319.8	334.4	113.3	131.5	177.0	271.3	4,032.5	4,061.3
Manitoba	45.0	46.7	16.6	18.1	29.6	37.0	504.6	506.4
Saskatchewan	44.1	43.8	16.9	16.4	32.4	34.2	459.2	447.8
Alberta	62.9	63.1	23.1	22.8	39.9	43.2	869.5	844.4
British Columbia	99.1	106.1	36.9	38.7	64.4	82.9	1,204.3	1,190.9
Yukon Territory	0.6	0.4	0.2	0.1	0.1	0.1	10.4	9.0
Northwest Territories	0.9	0.6	0.2	0.2	0.2	0.2	19.8	17.8
Canada	889.2	932.7	318.2	354.6	508.3	702.0	11,216.9	11,229.4

4.15 Marital status of the population 15 years and over, by age group and sex, 1971

Age group	Sex	Single ¹	Married	Widowed	Divorced	Total
15-24 years	M	1,693,645	317,350	2,705	2,515	2,016,205
	F	1,374,290	603,585	3,945	5,730	1,987,540
	T	3,067,935	920,930	6,640	8,245	4,003,745
25-34 years	M	293,005	1,149,810	3,415	15,355	1,461,585
	F	179,150	1,214,385	9,450	24,975	1,427,960
	T	472,155	2,364,195	12,865	40,340	2,889,545
35-44 years	M	126,565	1,132,775	6,990	19,490	1,285,815
	F	88,225	1,099,585	26,605	26,160	1,240,580
	T	214,790	2,232,360	33,595	45,650	2,526,400
45-54 years	M	100,980	997,320	16,280	17,740	1,132,315
	F	84,990	973,660	77,965	22,650	1,159,265
	T	185,970	1,970,980	94,235	40,395	2,291,575
55-64 years	M	80,565	729,935	31,510	12,095	854,105
	F	83,640	620,580	159,310	14,105	877,630
	T	164,195	1,350,515	190,815	26,200	1,731,740
65-69 years	M	31,915	238,045	22,710	3,380	296,050
	F	34,595	178,810	106,945	3,560	323,910
	T	66,515	416,855	129,660	6,940	619,955
70 years and over	M	50,980	323,525	107,525	3,780	485,810
	F	68,145	198,245	368,680	3,570	638,640
	T	119,125	521,765	476,200	7,350	1,124,445
Total	M	2,377,645	4,888,760	191,125	74,355	7,531,890
	F	1,913,025	4,888,845	752,895	100,760	7,655,525
	T	4,290,675	9,777,605	944,025	175,115	15,187,415

¹The total number of single persons of all ages (including those under 15) amounted to 10,671,575, comprising 5,641,130 males and 5,030,445 females.

4.16 Mother tongues of the population, 1961 and 1971, and language most often spoken in the home, 1971

Language group	Language first spoken and still understood						Language most often spoken in the home	
	1961		1971		1971		1971	
	No.	%	No.	%	No.	%	No.	%
English	10,660,534	58.45	12,973,810	60.15	14,446,235	66.97		
French	5,123,151	28.09	5,793,650	26.86	5,546,025	25.71		
Italian	339,626	1.86	538,360	2.50	425,235	1.97		
German	563,713	3.09	561,085	2.60	213,350	0.99		
Ukrainian	361,496	1.98	309,855	1.44	144,760	0.67		
Indian and Eskimo	166,531	0.91	179,820	0.83	137,285	0.64		
Greek	40,455	0.22	104,455	0.48	86,830	0.40		
Chinese	49,099	0.27	94,855	0.44	77,890	0.36		
Portuguese	18,213	0.10	86,925	0.40	74,765	0.35		
Polish	161,720	0.89	134,780	0.62	70,960	0.33		
Magyar (Hungarian)	85,939	0.47	86,835	0.40	50,670	0.23		
Netherlands	170,177	0.93	144,925	0.67	36,170	0.17		
Croatian, Serbian, etc.	28,866	0.16	74,190	0.34	29,310	0.13		
Yiddish	82,448	0.45	49,890	0.23	26,330	0.12		
Czech and Slovak	51,423	0.28	45,150	0.21	24,555	0.11		
Indo-Pakistani	4,505	0.02	32,555	0.15	23,110	0.11		
Finnish	44,785	0.25	36,725	0.17	18,280	0.08		
Spanish	6,720	0.04	23,815	0.11	17,710	0.08		
Arabic (incl. Syrian)	12,999	0.07	28,550	0.13	15,260	0.07		
Russian	42,903	0.24	31,745	0.15	12,590	0.06		
Japanese	17,856	0.10	16,890	0.08	10,500	0.05		
Estonian	13,830	0.08	14,520	0.07	10,110	0.05		
Lithuanian	14,997	0.08	14,725	0.07	9,985	0.05		

4.16 Mother tongues of the population, 1961 and 1971, and language most often spoken in the home, 1971 (concluded)

Language group	Language first spoken and still understood				Language most often spoken in the home	
	1961		1971		1971	
	No.	%	No.	%	No.	%
Lettish	14,062	0.08	14,140	0.07	9,250	0.04
Danish	35,035	0.19	27,395	0.13	4,690	0.02
Romanian	10,165	0.06	11,300	0.05	4,455	0.02
Flemish	14,304	0.08	14,240	0.07	3,190	0.01
Swedish	32,632	0.18	21,680	0.10	2,210	0.01
Norwegian	40,054	0.22	27,405	0.13	2,160	0.01
Gaelic	7,533	0.04	21,200	0.10	1,175	--
Icelandic	8,993	0.05	7,860	0.04	995	--
Welsh	3,040	0.02	3,160	0.01	370	--
Other	10,443	0.06	41,830	0.19	31,900	0.15
Total	18,238,247	100.00	21,568,310	100.00	21,568,310	100.00

4.17 Numerical and percentage distribution of English, French, and other mother tongues, by province, 1961 and 1971

Province or territory	1961				1971			
	English	French	Other	Total	English	French	Other	Total
Nfld.	No. 451,530 % 98.6	3,150 0.7	3,173 0.7	457,853 100.0	514,515 98.5	3,640 0.7	3,950 0.8	522,105 100.0
PEI	No. 95,564 % 91.3	7,958 7.6	1,107 1.1	104,629 100.0	103,100 92.4	7,365 6.6	1,180 1.1	111,640 100.0
NS	No. 680,233 % 92.3	39,568 5.4	17,206 2.3	737,007 100.0	733,555 93.0	39,335 5.0	16,075 2.0	788,960 100.0
NB	No. 378,633 % 63.3	210,530 35.2	8,773 1.5	597,936 100.0	410,400 64.7	215,725 34.0	8,430 1.3	634,560 100.0
Que.	No. 697,402 % 13.3	4,269,689 81.2	292,120 5.6	5,259,211 100.0	789,185 13.1	4,867,250 80.7	371,325 6.2	6,027,760 100.0
Ont.	No. 4,834,623 % 77.5	425,302 6.8	976,167 15.7	6,236,092 100.0	5,971,570 77.5	482,040 6.3	1,249,495 16.2	7,703,105 100.0
Man.	No. 584,526 % 63.4	60,899 6.6	276,261 30.0	921,686 100.0	662,720 67.1	60,545 6.1	264,980 26.8	988,245 100.0
Sask.	No. 638,156 % 69.0	36,163 3.9	250,862 27.1	925,181 100.0	685,915 74.1	31,605 3.4	208,720 22.5	926,245 100.0
Alta.	No. 962,319 % 72.2	42,276 3.2	327,349 24.6	1,331,944 100.0	1,263,935 77.6	46,500 2.9	317,440 19.5	1,627,875 100.0
BC	No. 1,318,498 % 80.9	26,179 1.6	284,405 17.5	1,629,082 100.0	1,807,255 82.7	38,035 1.7	339,335 15.5	2,184,620 100.0
YT	No. 10,869 % 74.3	443 3.0	3,316 22.7	14,628 100.0	15,345 83.5	450 2.4	2,595 14.1	18,385 100.0
NWT	No. 8,181 % 35.6	994 4.3	13,823 60.1	22,998 100.0	16,305 46.8	1,160 3.3	17,335 49.8	34,810 100.0
Canada	No. 10,660,534 % 58.5	5,123,151 28.1	2,454,562 13.5	18,238,247 100.0	12,973,810 60.2	5,793,650 26.9	2,800,850 13.0	21,568,310 100.0

4.18 Numerical and percentage distribution of the population speaking one or both of the official languages, by province, 1961 and 1971

Year and province or territory	English only		French only		English and French		Neither English nor French	
	No.	%	No.	%	No.	%	No.	%
1961								
Newfoundland	450,945	98.5	522	0.1	5,299	1.2	1,087	0.2
Prince Edward Island	95,296	91.1	1,219	1.2	7,938	7.6	176	0.2
Nova Scotia	684,805	92.9	5,938	0.8	44,987	6.1	1,277	0.2
New Brunswick	370,922	62.0	112,054	18.7	113,495	19.0	1,465	0.2
Quebec	608,635	11.6	3,254,850	61.9	1,338,878	25.5	56,848	1.1
Ontario	5,548,766	89.0	95,236	1.5	493,270	7.9	98,820	1.6
Manitoba	825,955	89.6	7,954	0.9	68,368	7.4	19,409	2.1
Saskatchewan	865,821	93.6	3,853	0.4	42,074	4.5	13,433	1.5
Alberta	1,253,824	94.1	5,534	0.4	56,920	4.3	15,666	1.2
British Columbia	1,552,560	95.3	2,559	0.2	57,504	3.5	16,459	1.0
Yukon Territory	13,679	93.5	38	0.3	825	5.6	86	0.6
Northwest Territories	13,554	58.9	109	0.5	1,614	7.0	7,721	33.6
Canada	12,284,762	67.4	3,489,862	19.1	2,231,172	12.2	232,447	1.3
1971								
Newfoundland	511,620	98.0	510	0.1	9,350	1.8	625	0.1
Prince Edward Island	101,820	91.2	680	0.6	9,110	8.2	30	--
Nova Scotia	730,700	92.6	4,185	0.5	53,035	6.7	1,035	0.1
New Brunswick	396,855	62.5	100,985	15.9	136,115	21.5	600	0.1
Quebec	632,515	10.5	3,668,020	60.9	1,663,790	27.6	63,445	1.1
Ontario	6,724,100	87.3	92,840	1.2	716,065	9.3	170,090	2.2
Manitoba	881,715	89.2	5,020	0.5	80,935	8.2	20,585	2.1
Saskatchewan	867,315	93.6	1,825	0.2	45,985	5.0	11,110	1.2
Alberta	1,525,575	93.7	3,310	0.2	81,000	5.0	17,990	1.1
British Columbia	2,054,690	94.1	1,775	0.1	101,435	4.6	26,725	1.2
Yukon Territory	17,130	93.2	5	--	1,210	6.6	35	0.2
Northwest Territories	25,500	73.3	100	0.3	2,120	6.1	7,085	20.4
Canada	14,469,540	67.1	3,879,255	18.0	2,900,155	13.4	319,360	1.5

4.19 Population by ethnic group, 1951, 1961 and 1971

Ethnic group	1951		1961		1971	
	No.	%	No.	%	No.	%
British Isles	6,709,685	47.9	7,996,669	43.8	9,624,115	44.6
English	3,630,344	25.9	4,195,175	23.0		
Irish	1,439,635	10.3	1,753,351	9.6		
Scottish	1,547,470	11.0	1,902,302	10.4		
Welsh and other	92,236	0.7	145,841	0.8		
French	4,319,167	30.8	5,540,346	30.4	6,180,120	28.7
Other European	2,553,722	18.2	4,116,849	22.6	4,959,680	23.0
Austrian	32,231	0.2	106,535	0.6	42,120	0.2
Belgian	35,148	0.2	61,382	0.3	51,135	0.2
Czech and Slovak	63,959	0.5	73,061	0.4	81,870	0.4
Danish	42,671	0.3	85,473	0.5	75,725	0.4
Finnish	43,745	0.3	59,436	0.3	59,215	0.3
German	619,995	4.4	1,049,599	5.8	1,317,200	6.1
Greek	13,966	0.1	56,475	0.3	124,475	0.6
Hungarian	60,460	0.4	126,220	0.7	131,890	0.6
Icelandic	23,307	0.2	30,623	0.2	27,905	0.1
Italian	152,245	1.1	450,351	2.5	730,820	3.4
Jewish	181,670	1.3	173,344	1.0	296,945	1.4
Lithuanian	16,224	0.1	27,629	0.2	24,535	0.1
Netherlands	264,267	1.9	429,679	2.4	425,945	2.0
Norwegian	119,266	0.8	148,681	0.8	179,290	0.8
Polish	219,845	1.6	323,517	1.8	316,425	1.5
Portuguese	23,601	0.2	43,805	0.2	96,875	0.4
Romanian	91,279	0.7	119,168	0.7	27,375	0.1
Russian					64,475	0.3
Spanish					27,515	0.1
Swedish	97,780	0.7	121,757	0.6	101,870	0.5
Ukrainian	395,043	2.8	473,337	2.6	580,660	2.7
Yugoslavic	21,404	0.2	68,587	0.4	104,950	0.5
Other	35,616	0.2	88,190	0.5	70,460	0.3
Asiatic	72,827	0.5	121,753	0.7	285,540	1.3
Chinese	32,528	0.2	58,197	0.3	118,815	0.6
Japanese	21,663	0.2	29,157	0.2	37,260	0.2
Other	18,636	0.1	34,399	0.2	129,460	0.6
Other	354,028	2.5	462,630	2.5	518,850	2.4
Eskimo	9,733	0.1	11,835	0.1	17,550	0.1
Native Indian	155,874	1.1	208,286	1.1	295,215	1.4
Negro	18,020	0.1	32,127	0.2	34,445	0.2
West Indian					28,025	0.1
Other and not stated	170,401	1.2	210,382	1.2	143,620	0.7
Total	14,009,429	100.0	18,238,247	100.0	21,568,310	100.0

4.20 Principal religious denominations of the population, 1951, 1961 and 1971

Religious denomination	1951		1961		1971	
	No.	%	No.	%	No.	%
Adventist	21,398	0.2	25,999	0.1	28,590	0.1
Anglican Church of Canada	2,060,720	14.7	2,409,068	13.2	2,543,180	11.8
Baptist	519,585	3.7	593,553	3.3	667,245	3.1
Christian Reformed			62,257	0.3	83,390	0.4
Greek Orthodox	172,271	1.2	239,766	1.3	316,605	1.5
Jehovah's Witnesses	34,596	0.2	68,018	0.4	174,810	0.8
Jewish	204,836	1.5	254,368	1.4	276,025	1.3
Lutheran	444,923	3.2	662,744	3.6	715,740	3.3
Mennonite ¹	125,938	0.9	152,452	0.8	181,800	0.8
Mormon	32,888	0.2	50,016	0.3	66,635	0.3
Pentecostal	95,131	0.7	143,877	0.8	220,390	1.0
Presbyterian	781,747	5.6	818,558	4.5	872,335	4.0
Roman Catholic	6,069,496	43.3	8,342,826	45.7	9,974,895	46.2
Salvation Army	70,275	0.5	92,054	0.5	119,665	0.6
Ukrainian (Greek) Catholic ²	191,051	1.4	189,653	1.0	227,730	1.1
United Church of Canada	2,867,271	20.5	3,664,008	20.1	3,768,800	17.5
Other	317,303	2.2	469,030	2.6	1,330,480	6.2
Total	14,009,429	100.0	18,238,247	100.0	21,568,310	100.0

¹Includes "Hutterites".²Includes "Other Greek Catholic".

4.21 Country of birth of the population, 1951, 1961 and 1971

Country of birth	1951		1961		1971 ¹	
	No.	%	No.	%	No.	%
Canada ¹	11,949,518	85.3	15,393,984	84.4	18,272,780	84.7
United Kingdom	912,482	6.5	969,715	5.3	933,040	4.3
Other Commonwealth countries	20,567	0.1	47,887	0.3	170,100	0.8
United States	282,010	2.0	283,908	1.6	309,640	1.4

4.21 Country of birth of the population, 1951, 1961 and 1971 (concluded)

Country of birth	1951		1961		1971 ¹	
	No.	%	No.	%	No.	%
European countries	801,618	5.7	1,468,058	8.0	1,684,510	7.8
Germany	42,693	0.3	189,131	1.0	211,060	1.0
Italy	57,789	0.4	258,071	1.4	385,755	1.8
Netherlands	41,457	0.3	135,033	0.7	133,525	0.6
Poland	164,474	1.2	171,467	0.9	160,040	0.7
USSR	188,292	1.3	186,653	1.0	160,120	0.7
Other	306,913	2.2	527,703	2.9	634,010	2.9
Asiatic countries	37,145	0.3	57,761	0.3	119,425	0.6
Other	6,089	--	16,934	0.1	78,800	0.4
Total	14,009,429	100.0	18,238,247	100.0	21,568,310	100.0

¹For figures on province of birth, see Table 4.66.

4.22 Indian bands and registered population, by province and type of residence, Dec. 31, 1973

Province or territory	Number of bands	Registered band membership		Crown land	Total
		On reserves	Off reserves		
Prince Edward Island	2	291	172	—	463
Nova Scotia	12	3,477	1,498	11	4,986
New Brunswick	15	3,372	1,351	—	4,723
Quebec	40	17,347	7,275	4,754	29,376
Ontario	111	34,172	20,666	4,567	59,405
Manitoba	55	26,938	10,140	2,007	39,085
Saskatchewan	68	27,214	11,655	1,249	40,118
Alberta	41	24,295	5,574	1,908	31,777
British Columbia	192	33,339	17,200	434	50,973
Yukon Territory	13	—	907	1,748	2,655
Northwest Territories	16	—	505	6,428	6,933
Canada	565	170,445	76,943	23,106	270,494

4.23 Households and average persons per household, by province, 1961, 1966 and 1971

Province or territory	Households				Average persons per household		
	1961	1966	1971	% increase 1961-71	1961	1966	1971
Newfoundland	87,940	96,632	110,475	25.6	5.0	5.0	4.6
Prince Edward Island	23,942	25,360	27,895	16.5	4.2	4.2	3.9
Nova Scotia	175,341	185,245	208,425	18.9	4.0	4.0	3.7
New Brunswick	132,715	141,761	158,100	19.1	4.4	4.2	3.9
Quebec	1,191,469	1,389,115	1,605,750	34.8	4.2	4.0	3.7
Ontario	1,640,881	1,876,545	2,228,160	35.8	3.7	3.6	3.4
Manitoba	239,754	259,280	288,720	20.4	3.7	3.6	3.3
Saskatchewan	245,424	260,822	267,845	9.1	3.6	3.6	3.4
Alberta	349,816	393,707	464,945	32.9	3.7	3.6	3.4
British Columbia	459,534	543,075	668,305	45.4	3.4	3.3	3.2
Yukon Territory and Northwest Territories	7,920	8,931	12,685	60.2	4.2	4.3	4.0
Canada	4,554,736	5,180,473	6,041,305	32.6	3.9	3.7	3.5
Urban	3,280,682	3,941,459	4,743,280	44.6	3.7	3.6	3.4
Rural	1,274,054	1,239,014	1,298,025	1.9	4.2	4.1	3.9

4.24 Households by type, 1961, 1966 and 1971

Type of household	Number			Percentage		
	1961	1966	1971	1961	1966	1971
Family households	3,948,935	4,376,409	4,933,450	86.7	84.5	81.7
One-family households	3,780,992	4,246,753	4,812,360	83.0	82.0	79.7
Family of household head	3,734,581	4,209,549	4,773,900	82.0	81.3	79.0
Without additional persons	3,262,610	3,754,530	4,285,960	71.6	72.5	70.9
With additional persons	471,971	455,019	487,935	10.4	8.8	8.1
Family other than that of household head	46,411	37,204	38,465	1.0	0.7	0.6
Two-or-more family households	167,943	129,656	121,085	3.7	2.5	2.0
Including family of household head	165,703	128,325	120,000	3.6	2.5	2.0
With no family of household head	2,240	1,331	1,090	--	--	--
Non-family households	605,801	804,064	1,107,855	13.3	15.5	18.3
One person only	424,750	589,571	811,835	9.3	11.4	13.4
Two or more persons	181,051	214,493	296,020	4.0	4.1	4.9
Total households	4,554,736	5,180,473	6,041,300	100.0	100.0	100.0

4.25 Households by age and sex of head, 1961, 1966 and 1971

Age and sex of head	Number			Percentage		
	1961	1966	1971	1961	1966	1971
Under 25 years	179,725	269,065	414,470	3.9	5.2	6.9
Male	159,420	227,040	334,750	3.5	4.4	5.5
Female	20,305	42,025	79,720	0.4	0.8	1.3
25-34 years	938,389	1,014,676	1,265,290	20.6	19.6	20.9
Male	894,796	954,508	1,154,085	19.6	18.4	19.1
Female	43,593	60,168	111,205	1.0	1.2	1.8
35-44 years	1,072,159	1,190,133	1,252,500	23.5	23.0	20.7
Male	1,001,147	1,102,647	1,142,540	22.0	21.3	18.9
Female	71,012	87,486	109,960	1.6	1.7	1.8
45-54 years	936,625	1,052,705	1,173,055	20.6	20.3	19.4
Male	833,040	928,751	1,022,330	18.3	17.9	16.9
Female	103,585	123,954	150,725	2.3	2.4	2.5
55-64 years	681,014	803,338	955,995	15.0	15.5	15.8
Male	558,443	655,003	764,230	12.3	12.6	12.6
Female	122,571	148,335	191,765	2.7	2.9	3.2
65-69 years	266,099	298,002	358,775	5.8	5.8	5.9
Male	198,175	215,140	256,305	4.4	4.2	4.2
Female	67,924	82,862	102,475	1.5	1.6	1.7
70 years and over	480,725	552,554	621,220	10.6	10.7	10.3
Male	317,902	346,991	369,825	7.0	6.7	6.1
Female	162,823	205,563	251,395	3.6	4.0	4.2
Total household heads	4,554,736	5,180,473	6,041,300	100.0	100.0	100.0
Male	3,962,923	4,430,080	5,044,065	87.0	85.5	83.5
Female	591,813	750,393	997,240	13.0	14.5	16.5

4.26 Households by marital status of head, 1961, 1966 and 1971

Marital status of head	Number			Percentage			Percentage increase		
	1961	1966	1971	1961	1966	1971	1961-1966	1966-71	1961-71
Married ¹	3,778,473	4,196,595	4,745,795	83.0	81.0	78.6	11.1	13.1	25.6
Widowed	461,486	553,119	629,670	10.1	10.7	10.4	19.9	13.8	36.4
Divorced	27,027	40,263	112,665	0.6	0.8	1.9	49.0	179.8	316.9
Single, never married	287,750	390,496	553,170	6.3	7.5	9.2	35.7	41.7	92.2
Total households	4,554,736	5,180,473	6,041,300	100.0	100.0	100.0	13.7	16.6	32.6

¹Includes household heads who are married but separated.

4.27 Families and persons per family, by province, 1961, 1966 and 1971

Province or territory	Families			Average persons per family		
	1961	1966	1971	1961	1966	1971
Newfoundland	89,267	97,011	108,135	4.7	4.6	4.4
Prince Edward Island	21,969	22,728	24,260	4.2	4.2	4.0
Nova Scotia	161,894	166,237	180,720	4.0	4.0	3.8
New Brunswick	124,653	129,307	140,430	4.3	4.3	4.0
Quebec	1,103,822	1,229,301	1,357,185	4.2	4.2	3.9
Ontario	1,511,478	1,657,933	1,881,840	3.6	3.7	3.6
Manitoba	215,831	222,735	236,000	3.7	3.8	3.6
Saskatchewan	211,776	216,674	215,760	3.8	3.9	3.7
Alberta	305,671	331,158	382,110	3.8	3.9	3.7
British Columbia	394,023	445,297	533,625	3.6	3.6	3.5
Yukon Territory and Northwest Territories	7,060	7,885	10,620	4.3	4.5	4.3
Canada	4,147,444	4,526,266	5,070,680	3.9	3.9	3.7

4.28 Families by type, 1961, 1966 and 1971

Type of family	Number			Percentage		
	1961	1966	1971	1961	1966	1971
Maintaining own household	3,911,529	4,345,718	4,898,290	94.3	96.0	96.6
Not maintaining own household	235,915	180,548	172,390	5.7	4.0	3.4
Related	157,120	134,854	126,775	3.8	3.0	2.5
Not related	78,795	45,694	45,615	1.9	1.0	0.9
Lodging	72,416	38,583	40,705	1.7	0.8	0.8
Other	6,379	7,111	4,910	0.2	0.2	0.1
Total families	4,147,444	4,526,266	5,070,680	100.0	100.0	100.0

4.29 Husband-wife families and one-parent families by age of head, 1961, 1966 and 1971

Age of head	1961		1966		1971	
	No.	%	No.	%	No.	%
Husband-wife families	3,800,026	91.6	4,154,381	91.8	4,591,935	90.6
Under 25 years	174,574	4.2	214,742	4.7	292,885	5.8
25-34 years	920,871	22.2	945,374	20.9	1,087,900	21.5
35-44 years	989,141	23.8	1,069,471	23.6	1,072,485	21.2
45-54 years	792,269	19.1	874,492	19.3	940,320	18.5
55-64 years	505,109	12.2	593,864	13.1	684,335	13.5
65 years and over	418,062	10.1	456,438	10.1	514,015	10.1
One-parent families	347,418	8.4	371,885	8.2	478,745	9.4
Male	75,203	1.8	71,502	1.6	100,680	2.0
Under 25 years	1,510	--	2,407	0.1	4,225	0.1
25-34 years	6,551	0.2	5,559	0.1	16,535	0.3
35-44 years	11,684	0.3	12,176	0.3	22,215	0.4
45-54 years	15,671	0.4	15,918	0.4	22,525	0.4
55-64 years	13,522	0.3	13,313	0.3	16,375	0.3
65 years and over	26,265	0.6	22,129	0.5	18,805	0.4
Female	272,215	6.6	300,383	6.6	378,065	7.5
Under 25 years	10,993	0.3	12,542	0.3	25,295	0.5
25-34 years	30,662	0.7	36,327	0.8	66,665	1.3
35-44 years	52,498	1.3	59,515	1.3	78,350	1.5
45-54 years	59,539	1.4	68,592	1.5	85,165	1.7
55-64 years	46,578	1.1	50,480	1.1	59,505	1.2
65 years and over	71,945	1.7	72,927	1.6	63,090	1.2
Total family heads	4,147,444	100.0	4,526,266	100.0	5,070,680	100.0

4.30 Families by mother tongue of head, by province, 1971

Province or territory	Total family heads	Mother tongue of family head					
		English		French		Other	
		No.	%	No.	%	No.	%
Newfoundland	108,135	106,125	98.1	970	0.9	1,040	1.0
Prince Edward Island	24,260	22,230	91.6	1,665	6.9	365	1.5
Nova Scotia	180,720	165,320	91.5	10,520	5.8	4,880	2.7
New Brunswick	140,435	93,355	66.5	44,780	31.9	2,300	1.6
Quebec	1,357,185	180,890	13.3	1,070,380	78.9	105,910	7.8
Ontario	1,881,835	1,368,260	72.7	120,255	6.4	393,315	20.9
Manitoba	235,995	142,665	60.5	14,905	6.3	78,425	33.2
Saskatchewan	215,760	139,605	64.7	8,365	3.9	67,785	31.4
Alberta	382,115	266,850	69.8	12,340	3.2	102,925	26.9
British Columbia	533,630	412,035	77.2	11,500	2.2	110,095	20.6
Yukon Territory and Northwest Territories	10,615	5,995	56.5	430	4.0	4,200	39.6
Canada	5,070,680	2,903,325	57.3	1,296,105	25.6	871,250	17.2

4.31 Children living at home by age group and province, 1971¹

Province or territory	Under 6 years	6-14 years	15-18 years	19-24 years	Total children living at home
Newfoundland	74,245	117,845	44,255	23,050	259,400
Prince Edward Island	12,070	22,615	8,830	5,465	48,980
Nova Scotia	84,055	152,460	59,725	34,940	331,180
New Brunswick	69,660	129,785	52,565	31,655	283,670
Quebec	586,750	1,164,895	471,580	355,760	2,578,985
Ontario	771,305	1,409,820	532,285	328,480	3,041,890
Manitoba	102,575	179,925	70,815	39,610	392,920
Saskatchewan	95,755	180,540	72,325	31,220	379,840
Alberta	181,755	326,320	118,485	53,460	680,015
British Columbia	209,750	391,140	147,065	78,495	826,445
Yukon Territory and Northwest Territories	8,860	11,925	2,985	1,500	25,265
Canada	2,196,780	4,087,270	1,580,910	983,635	8,848,595

¹Figures in this table are slightly different from those published in the 1973 *Canada Year Book*. This is due to the fact that only preliminary data were available at that time.

4.32 Summary of principal vital statistics, by province, 1951-73

Province or territory and year	Live births		Deaths		Natural increase ¹		Marriages		Divorces	
	No.	Rate ²	No.	Rate ²	No.	Rate ²	No.	Rate ²	No.	Rate ³
NEWFOUNDLAND										
Av. 1951-55	13,101	34.1	2,926	7.6	10,175	26.5	2,836	7.4	5	1.3
" 1956-60	14,934	34.6	3,114	7.2	11,820	27.4	3,032	7.0	5	1.2
" 1961-65	15,104	31.8	3,142	6.6	11,962	25.2	3,331	7.0	5	1.0
" 1966-70	13,057	25.8	3,122	6.2	9,935	19.6	4,147	8.2	56	11.1
1971	12,767	24.5	3,199	6.1	9,568	18.4	4,685	9.0	150	28.7
1972	12,898	24.2	3,349	6.3	9,549	17.9	5,106	9.6	177	33.3
1973	11,906	22.0	3,405	6.3	8,501	15.7	5,048	9.3	224	41.4
PRINCE EDWARD ISLAND										
Av. 1951-55	2,720	27.2	923	9.2	1,797	18.0	623	6.2	10	9.8
" 1956-60	2,674	26.6	953	9.5	1,721	17.1	645	6.4	4	3.9
" 1961-65	2,767	25.7	1,006	9.3	1,761	16.4	672	6.2	8	7.8
" 1966-70	2,063	18.9	1,020	9.4	1,044	9.6	817	7.5	45	41.3
1971	2,103	18.8	1,007	9.0	1,096	9.8	961	8.6	61	54.7
1972	2,010	17.8	1,052	9.3	958	8.5	1,013	9.0	65	57.5
1973	1,886	16.4	1,020	8.9	866	7.5	1,014	8.8	54	47.0
NOVA SCOTIA										
Av. 1951-55	18,246	27.5	5,802	8.8	12,444	18.7	5,283	8.0	212	32.0
" 1956-60	19,097	26.9	6,062	8.5	13,035	18.4	5,289	7.4	227	32.0
" 1961-65	18,526	24.7	6,312	8.4	12,214	16.3	5,313	7.1	277	36.9
" 1966-70	14,217	18.7	6,622	8.7	7,594	10.0	6,335	8.3	573	75.4
1971	14,250	18.1	6,682	8.5	7,568	9.6	6,883	8.7	721	91.4
1972	13,536	17.0	6,904	8.7	6,632	8.3	7,291	9.2	927	116.7
1973	13,289	16.5	6,928	8.6	6,361	7.9	7,273	9.0	1,249	155.2
NEW BRUNSWICK										
Av. 1951-55	16,496	31.0	4,576	8.6	11,920	22.4	4,306	8.1	167	31.4
" 1956-60	16,567	29.0	4,640	8.1	11,927	20.9	4,357	7.6	194	34.0
" 1961-65	15,668	25.8	4,749	7.8	10,919	18.0	4,531	7.5	199	32.7
" 1966-70	11,984	19.3	4,873	7.8	7,112	11.4	5,481	8.8	267	42.9
1971	12,187	19.2	4,943	7.8	7,244	11.4	6,149	9.7	482	76.0
1972	11,806	18.4	4,982	7.8	6,824	10.6	6,455	10.0	466	72.5
1973	11,425	17.5	5,084	7.8	6,341	9.7	6,357	9.8	574	88.0
QUEBEC										
Av. 1951-55	128,523	30.0	34,269	8.0	94,254	22.0	35,584	8.3	327	7.6
" 1956-60	139,844	28.6	35,714	7.3	104,130	21.3	36,798	7.5	403	8.2
" 1961-65	131,453	24.0	37,698	6.9	93,755	17.1	38,126	7.0	380	6.9
" 1966-70	99,068	16.8	39,475	6.7	59,592	10.1	46,768	7.9	2,018	34.1
1971	89,210	14.8	40,738	6.8	48,472	8.0	49,695	8.2	5,201	86.3
1972	83,603	13.8	42,311	7.0	41,292	6.8	53,830	8.9	6,421	106.1
1973	84,057	13.8	42,666	7.0	41,391	6.8	51,943	8.5	8,091	133.1
ONTARIO										
Av. 1951-55	128,861	26.1	44,715	9.0	84,146	17.1	45,213	9.1	2,430	49.2
" 1956-60	152,688	26.4	49,431	8.5	103,257	17.9	46,482	8.0	2,801	48.4
" 1961-65	152,629	23.5	52,664	8.1	99,965	15.4	46,794	7.2	3,342	51.3
" 1966-70	130,166	17.8	55,415	7.6	74,751	10.2	62,216	8.5	7,452	102.1
1971	130,395	16.9	56,623	7.4	73,772	9.5	69,590	9.0	12,205	158.4
1972	125,060	16.0	58,905	7.5	66,155	8.5	72,278	9.2	13,183	168.5
1973	123,776	15.6	59,876	7.5	63,900	8.0	72,371	9.1	13,781	173.6
MANITOBA										
Av. 1951-55	21,321	26.4	6,775	8.4	14,546	18.0	7,104	8.8	356	44.1
" 1956-60	22,408	25.6	7,293	8.3	15,115	17.3	6,600	7.5	315	35.9
" 1961-65	22,137	23.4	7,637	8.1	14,500	15.3	6,674	7.1	376	39.7
" 1966-70	17,734	18.3	7,868	8.1	9,865	10.2	8,283	8.5	805	82.9
1971	18,031	18.2	8,025	8.1	10,006	10.1	9,127	9.2	1,383	140.0
1972	17,398	17.6	8,225	8.3	9,173	9.3	9,181	9.3	1,413	142.5
1973	16,964	17.0	8,196	8.2	8,768	8.8	9,196	9.2	1,620	162.3
SASKATCHEWAN										
Av. 1951-55	23,554	27.5	6,547	7.6	17,007	19.9	6,876	8.0	231	26.9
" 1956-60	24,046	26.9	6,753	7.5	17,293	19.4	6,395	7.1	247	27.6
" 1961-65	22,811	24.4	7,268	7.8	15,543	16.6	6,316	6.7	298	31.8
" 1966-70	17,852	18.7	7,466	7.8	10,386	10.9	7,460	7.8	566	59.3
1971	16,054	17.3	7,413	8.0	8,641	9.3	7,813	8.4	815	88.0
1972	15,473	16.9	7,590	8.3	7,883	8.6	7,877	8.6	826	90.1
1973	14,806	16.3	7,646	8.4	7,160	7.9	7,847	8.6	887	97.7
ALBERTA										
Av. 1951-55	31,087	30.6	7,527	7.4	23,560	23.2	9,750	9.6	612	60.4
" 1956-60	36,920	30.6	8,329	6.9	28,591	23.7	10,230	8.5	788	65.1
" 1961-65	37,004	26.5	9,317	6.7	27,687	19.8	10,581	7.6	1,226	87.5
" 1966-70	30,851	20.2	9,839	6.4	21,012	13.8	13,711	9.0	2,481	162.4
1971	30,545	18.8	10,525	6.5	20,020	12.3	15,614	9.6	3,656	224.6
1972	29,282	17.7	10,699	6.5	18,583	11.2	16,345	9.9	3,767	227.8
1973	29,288	17.4	10,763	6.4	18,525	11.0	16,280	9.7	4,435	263.5
BRITISH COLUMBIA										
Av. 1951-55	31,347	25.1	12,233	9.8	19,114	15.3	11,131	8.9	1,461	116.9
" 1956-60	38,930	25.7	13,980	9.2	24,950	16.5	11,955	7.9	1,514	100.0
" 1961-65	36,753	21.5	15,236	8.9	21,517	12.6	11,927	7.0	1,592	93.1
" 1966-70	34,266	17.1	16,737	8.3	17,529	8.7	17,186	8.6	3,272	163.1
1971	34,852	16.0	17,783	8.1	17,069	7.9	20,389	9.3	4,926	225.5
1972	34,563	15.4	18,021	8.0	16,542	7.4	20,659	9.2	5,036	224.1
1973	34,352	14.8	18,095	7.8	16,257	7.0	21,303	9.2	5,687	245.7

4.32 Summary of principal vital statistics, by province, 1951-73 (concluded)

Province or territory and year	Live births		Deaths		Natural increase ¹		Marriages		Divorces	
	No.	Rate ²	No.	Rate ²	No.	Rate ²	No.	Rate ²	No.	Rate ²
YUKON TERRITORY										
Av. 1951-55	413	43.0	90	9.4	323	33.6	94	9.8	..	..
" 1956-60	505	39.4	91	7.1	414	32.3	109	8.5	..	..
" 1961-65	509	34.9	87	6.0	422	28.9	107	7.3	17	118.0
" 1966-70	407	27.1	89	5.9	319	21.3	153	10.2	31	206.7
1971	506	27.5	104	5.7	402	21.8	166	9.0	47	255.6
1972	451	23.9	103	5.5	348	18.4	181	9.5	47	248.7
1973	420	21.3	111	5.6	309	15.7	206	10.3	60	300.0
NORTHWEST TERRITORIES										
Av. 1951-55	666	40.1	284	17.1	382	23.0	115	6.9	..	..
" 1956-60	943	46.7	310	15.3	633	31.4	155	7.7	1	..
" 1961-65	1,174	45.9	250	9.8	924	36.1	154	6.0	3	11.5
" 1966-70	1,244	41.5	229	7.6	1,015	33.8	212	7.1	13	43.3
1971	1,287	37.0	230	6.6	1,057	30.4	252	7.2	25	71.8
1972	1,239	34.4	272	7.6	967	26.8	254	7.1	36	100.0
1973	1,204	31.9	249	6.6	955	25.3	226	5.9	42	110.5
CANADA										
Av. 1951-55	416,334	28.0	126,666	8.5	289,668	19.5	128,915	8.7	5,811	39.1
" 1956-60	469,555	27.6	136,669	8.0	332,886	19.6	132,047	7.8	6,498	38.2
" 1961-65	456,534	24.1	145,368	7.7	311,166	16.4	134,524	7.1	7,723	40.7
" 1966-70	372,909	18.0	152,755	7.4	220,154	10.6	172,769	8.3	17,579	84.8
1971	362,187	16.8	157,272	7.3	204,915	9.5	191,324	8.9	29,672	137.6
1972	347,319	15.9	162,413	7.4	184,906	8.5	200,470	9.2	32,364	148.3
1973	343,373	15.5	164,039	7.4	179,334	8.1	199,064	9.0	36,704	166.1

¹Excess births over deaths.

²Per 1,000 population.

³Per 100,000 population.

4.33 Summary of principal vital statistics for cities, towns and other municipal subdivisions¹ of 50,000 population and over², 1973 with averages for 1961-65 and 1966-70

Province and urban centre	Live births			Deaths			Marriages ³		
	Av. 1961-65	Av. 1966-70	1973	Av. 1961-65	Av. 1966-70	1973	Av. 1961-65	Av. 1966-70	1973
NEWFOUNDLAND									
*St. John's, c	1,966	1,812	1,774	542	608	665	736	932	1,123
PRINCE EDWARD ISLAND									
Charlottetown, c ⁴	417	307	265	232	246	235	157	157	258
NOVA SCOTIA									
*Dartmouth, c	1,700	1,409	1,429	230	261	317	287	379	493
*Halifax, c	2,109	1,791	1,698	736	855	1,003	1,047	1,281	1,495
NEW BRUNSWICK									
*Saint John, c	1,743	1,598	1,465	690	766	801	607	728	904
QUEBEC									
*Hull, c	1,640	1,289	1,138	419	423	472	430	520	602
*LaSalle, c	1,062	1,371	1,184	210	295	385	128	222	304
*Laval, c	3,939	3,372	2,836	669	902	1,195	599	968	1,229
*Longueuil, c	639	1,674	1,965	225	442	523	185	567	688
*Montreal, c	28,576	20,066	12,843	10,309	10,462	10,424	10,548	11,766	11,444
*Montreal North, c	1,453	1,490	1,582	343	382	464	215	386	442
*Quebec, c	3,601	2,672	2,561	1,612	1,587	1,732	1,536	1,683	1,879
*Ste-Foy, c	1,038	1,098	992	158	190	259	130	389	472
*St-Laurent, t	1,059	948	665	272	352	463	287	401	432
*St-Léonard, c	316	834	1,136	45	124	224	22	170	318
*Sherbrooke, c	1,812	1,505	1,286	590	592	632	572	698	821
*Trois-Rivières, c	1,384	947	662	438	433	505	447	475	506
*Verdun, c	1,547	1,119	738	606	665	769	528	636	617
ONTARIO									
*Brantford, c	1,191	1,045	964	550	622	610	489	612	685
*Burlington, t	1,203	1,347	1,445	274	324	416	246	415	567
*Etobicoke, b	5,117	4,081	3,455	1,311	1,502	1,843	881	1,215	1,561
*Guelph, c	1,010	996	1,052	364	405	437	352	509	542
*Hamilton, c	6,467	5,475	4,543	2,447	2,495	2,592	2,351	2,946	3,012
*Kingston, c	1,363	1,126	862	481	523	500	527	718	815
*Kitchener, c	2,081	2,131	2,243	564	670	806	655	1,009	1,272
*London, c	4,129	3,752	3,787	1,482	1,576	1,690	1,387	1,914	2,072
*Mississauga, t	1,697	2,402	3,581	344	458	657	287	511	1,155
*Niagara Falls, c	1,151	1,030	868	441	456	541	416	549	591
*Oakville, c	905	913	985	186	227	298	223	450	543
*Oshawa, c	1,769	1,686	1,616	459	509	609	545	691	896
*Ottawa, c	6,034	4,745	3,702	2,271	2,443	2,545	2,209	3,051	3,565
*Peterborough, c	1,035	890	798	442	489	582	384	571	676
*St. Catharines, c	1,910	1,764	1,667	696	791	914	666	909	1,103
*Sarnia, c	1,220	1,034	873	358	399	413	373	537	635
*Sault Ste Marie, c	1,439	1,512	1,254	385	487	515	488	645	811
*Scarborough, b	6,419	5,150	5,461	1,237	1,546	1,894	962	1,765	2,188

4.33 Summary of principal vital statistics for cities, towns and other municipal subdivisions¹ of 50,000 population and over², 1973 with averages for 1961-65 and 1966-70 (concluded)

Province and urban centre	Live births			Deaths			Marriages ³		
	Av. 1961-65	Av. 1966-70	1973	Av. 1961-65	Av. 1966-70	1973	Av. 1961-65	Av. 1966-70	1973
ONTARIO (concluded)									
*Sudbury, c	2,353	1,881	1,861	525	560	649	706	928	1,074
Thunder Bay, c	1,998	1,682	1,670	835	909	1,085	745	951	1,105
*Toronto, c	15,362	13,680	10,944	7,354	6,737	6,408	10,293	13,413	14,311
*Windsor, c	2,498	3,654	3,050	1,274	1,708	1,714	1,217	1,907	2,086
*York, b	3,497	3,101	2,643	1,022	1,009	1,017	488	523	530
*York, E., b	1,852	1,693	1,783	853	865	1,043	184	185	279
York, N., b	7,967	8,547	8,291	1,551	2,134	2,814	943	1,617	2,213
MANITOBA									
*St. James-Assiniboia, c	736	715	^s	260	303	^s	232	388	^s
*Winnipeg, c	5,788	4,631	8,759	2,672	2,708	4,497	2,620	3,180	5,433
SASKATCHEWAN									
*Regina, c	3,265	2,840	2,735	820	928	1,066	1,004	1,263	1,376
*Saskatoon, c	2,770	2,676	2,156	769	911	993	923	1,281	1,334
ALBERTA									
*Calgary, c	8,083	7,503	7,291	2,002	2,238	2,452	2,410	3,483	4,424
*Edmonton, c	9,704	8,776	7,626	2,014	2,224	2,606	3,209	4,428	4,945
BRITISH COLUMBIA									
*Burnaby, dm	2,057	1,837	1,563	769	857	875	530	798	857
Coquitlam, dm	745	793	725	147	181	249	105	175	238
*North Vancouver, dm	864	797	819	228	233	252	140	251	330
Richmond, twp	1,093	898	1,030	231	265	328	171	291	502
Saanich, dm	1,042	827	760	416	485	534	199	334	405
Surrey, dm	1,761	1,577	1,727	550	637	706	288	451	661
Vancouver, c	6,743	6,317	4,668	4,758	4,928	4,815	3,881	5,044	4,901
Victoria, c	972	804	674	898	1,001	1,020	671	925	1,175

¹Figures for certain subdivisions may not be comparable for the periods shown because of changes in area boundaries, particularly for those indicated by an asterisk: c = city, t = town, b = borough, dm = district municipality and twp = township.
²As at the date of the 1971 Census.
³By place of occurrence.
⁴Population fewer than 50,000 at date of 1971 Census but included as the largest urban centre in Prince Edward Island.
⁵Amalgamated with city of Winnipeg.

4.34 Live births, by age of parents, 1973¹

Age group	Legitimate				Illegitimate mothers	
	Fathers		Mothers			
	No.	%	No.	%	No.	%
Under 20 years	6,137	2.0	25,839	8.5	14,013	47.8
Under 15 years	—	—	29	—	305	1.0
15 years	—	—	299	0.1	951	3.3
16 "	57	—	1,594	0.5	2,315	7.9
17 "	417	0.1	4,305	1.4	3,382	11.5
18 "	1,692	0.6	7,916	2.6	3,704	12.6
19 "	3,971	1.3	11,696	3.9	3,356	11.5
20-24 "	63,675	21.2	102,439	34.0	9,117	31.1
25-29 "	116,728	38.9	110,072	36.5	3,778	12.9
30-34 "	69,200	23.0	44,578	14.8	1,566	5.3
35-39 "	28,597	9.5	14,866	4.9	650	2.2
40-44 "	11,578	3.8	3,699	1.2	208	0.7
45-49 "	3,711	1.2	227	0.1	12	—
50 years and over	1,349	0.4	4	—	—	—
Total, stated ages	300,975	100.0	301,724	100.0	29,344	100.0
Age not stated	832	...	83	...	316	...
Total, all ages	301,807	...	301,807	...	29,660	...

¹Excludes Newfoundland.

4.35 Number of live-born children in order of live births, by age of mother, 1973¹

Order of birth of child	Age of mother									% of total	
	Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45 and over	Age not stated		All ages
1st child	331	32,968	60,230	39,177	8,487	1,863	343	12	319	143,730	43.3
2nd "	3	5,866	38,706	44,769	14,155	2,933	451	14	25	106,922	32.3
3rd "	—	609	9,773	19,882	11,414	3,125	530	11	14	45,358	13.7
4th "	—	51	2,138	6,504	6,052	2,566	535	22	3	17,871	5.4
5th "	—	6	533	2,046	2,855	1,762	478	23	1	7,704	2.3
6th "	—	—	115	854	1,412	1,159	401	31	3	3,975	1.2
7th "	—	—	35	370	771	698	287	21	—	2,182	0.7
8th "	—	—	8	132	443	478	221	18	1	1,301	0.4
9th "	—	—	3	70	272	346	167	22	1	881	0.3
10th "	—	—	—	28	147	230	148	19	1	573	0.2
11th "	—	—	—	5	82	158	117	14	—	376	0.1

4.35 Number of live-born children in order of live births, by age of mother, 1973¹ (concluded)

Order of birth of child	Age of mother									All ages	% of total
	Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45 and over	Age not stated		
12th child	—	—	—	2	32	92	83	7	1	217	0.1
13th "	—	—	—	1	9	53	54	9	—	126	--
14th "	—	—	—	—	8	29	32	5	—	74	--
15th "	—	—	—	—	1	9	26	4	—	40	--
16th "	—	—	—	—	3	10	17	6	—	36	--
17th "	—	—	—	—	—	3	9	3	—	15	--
18th "	—	—	—	—	—	1	3	1	—	5	--
19th "	—	—	—	—	—	1	3	—	—	4	--
20th and over	—	—	—	—	—	—	—	1	—	1	--
Not stated	—	18	15	10	1	—	2	—	30	76	--
Total	334	39,518	111,556	113,850	46,144	15,516	3,907	243	399	331,467	100.0

¹Excludes Newfoundland.**4.36 Percentage distribution of total live births, by order of birth, 1951-73¹**

Year	1st child	2nd child	3rd child	4th and later children	Total
1951	28.3	25.4	17.2	29.1	100.0
1956	26.7	24.0	17.8	31.5	100.0
1961	25.9	23.2	18.0	32.9	100.0
1966	33.1	24.8	16.2	25.9	100.0
1967	36.0	25.7	15.4	22.9	100.0
1968	37.8	26.7	15.1	20.3	100.0
1969	38.5	27.5	15.2	18.8	100.0
1970	39.9	28.0	15.2	16.9	100.0
1971	40.6	29.3	14.9	15.2	100.0
1972	41.9	30.9	14.3	12.9	100.0
1973	43.3	32.3	13.7	10.7	100.0

¹Excludes Newfoundland.**4.37 Illegitimate live births and percentage of total live births, by province, 1951-73**

Year	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
<i>Number</i>													
Av. 1951-55	426	139	1,082	659	4,086	4,065	969	1,044	1,481	1,898	53	50	15,951
" 1956-60	587	139	1,201	687	4,675	4,891	1,166	1,194	1,941	2,505	72	102	19,160
" 1961-65	716	132	1,437	803	5,595	6,519	1,672	1,565	2,786	3,137	91	152	24,605
" 1966-70	959	150	1,550	935	6,934	9,385	2,072	2,054	3,644	4,507	94	229	32,513
1971	1,229	171	1,664	1,177	7,087	8,492	2,338	2,257	3,638	4,236	125	279	32,693
1972	1,345	171	1,662	1,193	6,161	8,437	2,255	2,237	3,456	3,930	100	310	31,257
1973	1,345	187	1,580	1,227	6,229	8,285	2,278	2,276	3,220	3,954	104	320	31,005
<i>Percentage of total live births</i>													
Av. 1951-55	3.2	5.1	5.9	4.0	3.2	3.2	4.5	4.4	4.8	6.1	12.9	7.5	3.8
" 1956-60	3.9	5.2	6.3	4.1	3.3	3.2	5.2	5.0	5.3	6.4	14.2	10.8	4.1
" 1961-65	4.7	4.8	7.8	5.1	4.3	4.3	7.6	6.9	7.5	8.5	17.8	13.0	5.4
" 1966-70	7.3	7.3	11.1	7.8	7.0	7.2	11.7	11.5	11.8	13.2	23.1	18.4	8.7
1971	9.6	8.1	11.7	9.7	7.9	6.5	13.0	14.1	11.9	12.2	24.7	21.7	9.0
1972	10.4	8.5	12.3	10.1	7.4	6.7	13.0	14.5	11.8	11.4	22.2	25.0	9.0
1973	11.3	9.9	11.9	10.7	7.4	6.7	13.4	15.4	11.0	11.5	24.8	26.6	9.0

4.38 Stillbirths and ratio per 1,000 live births, by province, 1951-73

Year	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
<i>Number (28 weeks or more gestation)</i>													
Av. 1951-55	222	52	337	291	2,705	2,017	336	313	425	374	6	11	7,088
" 1956-60	274	46	304	267	2,446	1,992	301	262	388	418	5	12	6,714
" 1961-65	261	47	256	220	1,727	1,818	278	242	358	370	5	19	5,600
" 1966-70	171	28	181	158	1,074	1,402	195	174	278	311	4	20	3,996
1971	158	23	139	138	807	1,221	164	159	254	310	6	17	3,396
1972	121	22	124	137	685	1,159	173	140	229	238	6	12	3,046
1973	151	15	119	132	658	1,034	151	144	206	243	3	10	2,866
<i>Ratio</i>													
Av. 1951-55	17.0	19.0	18.4	17.7	21.0	15.6	15.7	13.3	13.7	11.9	14.1	16.5	17.0
" 1956-60	18.3	17.1	15.9	16.1	17.5	13.0	13.4	10.9	10.5	10.7	10.7	12.3	14.3
" 1961-65	17.3	17.1	13.8	14.0	13.1	11.9	12.5	10.6	9.7	10.1	9.0	16.0	12.3
" 1966-70	13.0	13.5	12.7	13.1	10.8	10.7	10.9	9.7	9.0	9.0	9.8	16.0	10.7
1971	12.4	10.9	9.8	11.3	9.0	9.4	9.1	9.9	8.3	8.9	11.9	13.2	9.4
1972	9.4	10.9	9.2	11.6	8.2	9.3	9.9	9.0	7.8	6.9	13.3	9.7	8.8
1973	12.7	8.0	9.0	11.6	7.8	8.4	8.9	9.7	7.0	7.1	7.1	8.3	8.3

4.39 Stillbirths and ratio per 1,000 live births, by age of mother, 1973¹

Age group of mother	Live births	Stillbirths	Stillbirth ratio per 1,000 live births
Under 20 years	39,852	288	7.2
20-24 years	111,556	783	7.0
25-29 "	113,850	824	7.2
30-34 "	46,144	440	9.5
35-39 "	15,516	252	16.2
40-44 "	3,907	102	26.1
45 years and over	243	9	37.0
Age not stated	399	17	42.6
Total, all ages	331,467	2,715	8.2

¹Excludes Newfoundland.

4.40 Age-specific fertility rate and gross reproduction rate per 1,000 women, 1926-73¹

Year and province or territory	Age group							Total fertility rate	Gross reproduction rate
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
Canada									
1926	29.0	139.9	177.4	153.8	114.6	50.7	6.0	3,357	1.628
1931	29.9	137.1	175.1	145.3	103.1	44.0	5.5	3,200	1.555
1936	25.7	112.1	144.3	126.5	90.0	36.3	4.4	2,696	1.310
1941	30.7	138.4	159.8	122.3	80.0	31.6	3.7	2,832	1.377
1946	36.5	169.6	191.4	146.0	93.1	34.5	3.8	3,374	1.640
1951	48.1	188.7	198.8	144.5	86.5	30.9	3.1	3,503	1.701
1956	55.9	222.2	220.1	150.3	89.6	30.8	2.9	3,858	1.874
1961	58.2	233.6	219.2	144.9	81.1	28.5	2.4	3,840	1.868
1966	48.2	169.1	163.5	103.3	57.5	19.1	1.7	2,812	1.369
1971 ^r	40.1	134.4	142.0	77.3	33.6	9.4	0.6	2,187	1.060
1972	38.5	119.8	137.1	72.1	28.9	7.8	0.6	2,024	0.982
1973	37.2	117.7	131.6	67.1	25.7	6.4	0.4	1,931	0.937
1973									
Prince Edward Island	48.1	136.2	143.7	81.0	32.5	11.6	0.8	2,270	1.060
Nova Scotia	55.9	133.0	135.6	66.7	29.1	8.6	0.4	2,147	1.050
New Brunswick	56.1	141.6	140.6	69.9	29.0	9.5	0.6	2,237	1.091
Quebec	17.5	93.3	124.7	66.8	27.0	6.7	0.5	1,683	0.812
Ontario	40.9	119.8	132.2	68.0	25.1	5.6	0.3	1,960	0.952
Manitoba	53.1	132.6	144.6	78.1	30.4	8.7	0.6	2,241	1.081
Saskatchewan	54.4	148.3	156.9	74.2	32.9	10.7	0.7	2,391	1.170
Alberta	50.2	145.6	140.9	65.1	22.4	5.8	0.5	2,153	1.047
British Columbia	42.2	124.9	124.9	58.2	20.0	4.3	0.2	1,874	0.912
Yukon Territory	80.0	201.3	127.0	61.3	30.0	4.0	—	2,518	1.271
Northwest Territories	125.6	270.0	165.9	129.2	73.0	35.0	—	3,994	1.858

¹Excludes Newfoundland.

4.41 Percentage change in death rate for each age group, by sex, 1951-73

Age group	Male	Female	Age group	Male	Female
Under 1 year	-59.3	-60.0	50-54 years	-11.5	-26.2
1- 4 years	-61.9	-61.1	55-59 "	-7.4	-26.5
5- 9 "	-50.0	-57.1	60-64 "	-6.1	-30.4
10-14 "	-37.5	-40.0	65-69 "	-1.1	-32.1
15-19 "	+21.4	-33.3	70-74 "	-4.6	-32.7
20-24 "	+10.5	-40.0	75-79 "	-9.1	-34.8
25-29 "	-16.7	-45.5	80-84 "	-10.0	-33.1
30-34 "	-23.8	-46.7	85 years and over	-7.1	-25.9
35-39 "	-8.0	-35.0			
40-44 "	-7.7	-33.3	All ages	-14.9	-20.5
45-49 "	-9.4	-31.1			

4.42 Numerical and percentage distribution of deaths by age group and sex, 1961, 1966 and 1971

Age group	Distribution									% change in death rate 1961-71
	1961			1966			1971			
	No.	%	Rate ¹	No.	%	Rate ¹	No.	%	Rate ¹	
Male										
Under 1 year	7,447	9.0	30.5	5,138	5.8	25.8	3,712	4.1	19.9	-34.8
1- 4 years	1,154	1.4	1.3	988	1.1	1.1	679	0.7	0.9	-30.8
5- 9 "	672	0.8	0.6	669	0.8	0.6	641	0.7	0.6	—
10-14 "	527	0.6	0.6	620	0.7	0.6	589	0.6	0.5	-16.7
15-19 "	840	1.0	1.2	1,212	1.4	1.3	1,489	1.6	1.4	+16.7
20-24 "	969	1.2	1.7	1,324	1.5	1.8	1,697	1.9	1.8	+5.9
25-29 "	895	1.1	1.5	980	1.1	1.6	1,176	1.3	1.5	—
30-34 "	1,041	1.3	1.6	1,054	1.2	1.7	1,090	1.2	1.6	—
35-39 "	1,422	1.7	2.3	1,456	1.7	2.2	1,416	1.5	2.2	-4.3
40-44 "	1,916	2.3	3.4	2,146	2.4	3.4	2,310	2.5	3.6	+5.9
45-49 "	2,993	3.6	5.8	3,111	3.5	5.7	3,523	3.8	5.7	-1.7
50-54 "	4,242	5.1	9.6	4,855	5.5	9.7	4,839	5.3	9.3	-3.1
55-59 "	5,494	6.6	15.2	6,352	7.2	15.4	6,887	7.5	14.6	-3.9
60-64 "	7,028	8.5	24.0	7,911	9.0	24.0	8,755	9.5	22.9	-4.6
65-69 "	8,545	10.3	35.7	9,226	10.5	36.2	10,279	11.2	34.7	-2.8
70-74 "	10,582	12.8	54.0	10,549	12.0	53.1	10,663	11.6	51.9	-3.9
75-79 "	10,970	13.3	81.8	11,102	12.6	79.9	11,058	12.1	79.0	-3.4
80-84 "	8,635	10.4	125.1	10,006	11.4	124.0	10,182	11.1	118.8	-5.0
85 years and over	7,337	8.9	208.9	9,214	10.5	213.4	10,838	11.8	198.5	-5.0
Total, all ages	82,709	100.0	9.0	87,913	100.0	8.7	91,823	100.0	8.5	-5.6
Female										
Under 1 year	5,493	9.4	23.7	3,822	6.2	20.2	2,644	4.0	15.1	-36.3
1-4 years	844	1.4	1.0	775	1.3	0.9	551	0.8	0.8	-20.0
5- 9 "	405	0.7	0.4	480	0.8	0.4	424	0.7	0.4	—
10-14 "	278	0.5	0.3	318	0.5	0.3	365	0.6	0.3	—
15-19 "	322	0.6	0.5	467	0.8	0.5	579	0.9	0.6	+20.0
20-24 "	342	0.6	0.6	403	0.7	0.5	559	0.9	0.6	—
25-29 "	418	0.7	0.7	384	0.6	0.6	485	0.7	0.6	-14.3
30-34 "	562	1.0	0.9	564	0.9	0.9	565	0.9	0.9	—
35-39 "	880	1.5	1.4	845	1.4	1.3	815	1.2	1.3	-7.1
40-44 "	1,099	1.9	2.0	1,293	2.1	2.0	1,290	2.0	2.1	+5.0
45-49 "	1,617	2.8	3.2	1,823	2.9	3.3	1,901	2.9	3.0	-6.2
50-54 "	2,237	3.8	5.3	2,434	3.9	5.0	2,480	3.8	4.6	-13.2
55-59 "	2,749	4.7	8.0	3,115	5.0	7.7	3,477	5.3	7.2	-10.0
60-64 "	3,725	6.4	12.8	4,064	6.6	12.2	4,345	6.6	11.0	-14.1
65-69 "	5,304	9.1	21.4	5,393	8.7	19.5	5,614	8.6	17.3	-19.2
70-74 "	7,058	12.1	34.2	7,063	11.4	30.9	7,138	10.9	28.3	-17.3
75-79 "	8,290	14.2	59.2	8,695	14.0	53.9	8,930	13.6	48.1	-18.7
80-84 "	7,871	13.5	101.2	9,048	14.6	93.6	9,763	14.9	82.4	-18.6
85 years and over	8,782	15.1	192.2	10,964	17.7	183.4	13,524	20.7	163.3	-15.0
Total, all ages	58,276	100.0	6.5	61,950	100.0	6.2	65,449	100.0	6.1	-6.2
	1961			1966			1971			
	Male		Female	Male		Female	Male		Female	
Average age at death	59.7		63.1	62.0		65.9	63.3		68.2	
Median age at death ²	67.9		72.2	68.4		73.5	68.5		74.7	

¹Per 1,000 population per age group.

²The age above and below which half of the total number of annual deaths occurred.

4.43 Deaths and rate per 100,000 population according to the International Abbreviated List of 50 Causes, 1973

Abbreviated "B" List No.	Detailed List No.	Cause (eighth revision)	Deaths	Rate per 100,000 population
1	000	Cholera	—	—
2	001	Typhoid fever	1	—
3	004,006	Bacillary dysentery and amoebiasis	5	—
4	008,009	Enteritis and other diarrhoeal diseases	275	1.2
5	010-012	Tuberculosis of respiratory system	273	1.2
6	013-019	Other tuberculosis, including late effects	135	0.6
7	020	Plague	—	—
8	032	Diphtheria	2	—
9	033	Whooping cough	3	—
10	034	Streptococcal sore throat and scarlet fever	1	—
11	036	Meningococcal infection	71	0.3
12	040-043	Acute poliomyelitis	—	—
13	050	Smallpox	—	—
14	055	Measles	10	—
15	080-083	Typhus and other rickettsioses	—	—
16	084	Malaria	—	—
17	090-097	Syphilis and its sequelae	29	0.1
18	Remainder of 000-136	All other infective and parasitic diseases	370	1.7
19	140-209	Malignant neoplasms, including neoplasms of lymphatic and haematopoietic tissue	33,069	149.7

4.43 Deaths and rate per 100,000 population according to the International Abbreviated List of 50 Causes, 1973 (concluded)

Abbreviated "B" List No.	Detailed List No.	Cause (eighth revision)	Deaths	Rate per 100,000 population
20	210-239	Benign neoplasms and neoplasms of unspecified nature	280	1.3
21	250	Diabetes mellitus	3,272	14.8
22	260-269	Avitaminoses and other nutritional deficiency	167	0.8
23	280-285	Anæmias	326	1.5
24	320	Meningitis	129	0.6
25	390-392	Active rheumatic fever	23	0.1
26	393-398	Chronic rheumatic heart disease	1,195	5.4
27	400-404	Hypertensive disease	1,632	7.4
28	410-414	Ischæmic heart disease	50,559	228.8
29	420-429	Other forms of heart disease	3,784	17.1
30	430-438	Cerebrovascular disease	16,225	73.4
31	470-474	Influenza	566	2.6
32	480-486	Pneumonia	5,041	22.8
33	490-493	Bronchitis, emphysema and asthma	3,437	15.6
34	531-533	Peptic ulcer	836	3.8
35	540-543	Appendicitis	76	0.3
36	550-553, 560	Intestinal obstruction and hernia	686	3.1
37	571	Cirrhosis of liver	2,508	11.4
38	580-584	Nephritis and nephrosis	590	2.7
39	600	Hyperplasia of prostate	207	1.9 ^a
40	640-645	Abortion	1	
41 {	630-639	Other complications of pregnancy, childbirth and		
42 {	650-678	the puerperium	36	0.3 ^a
43 {	740-759	Congenital anomalies	1,705	7.7
44 {	764-768	Birth injury, difficult labour and other anoxic and		
45 {	772, 776	hypoxic conditions	1,286	5.8
46 {	760-763, 769-771	Other causes of perinatal mortality	1,333	6.0
47 {	773-775, 777-779	Symptoms and ill-defined conditions	1,384	6.3
48 {	780-796	All other diseases	15,699	71.1
49 {	Remainder of 240-738	Motor vehicle accidents	6,522	29.5
50 {	E810-E823	All other accidents	6,645	30.1
	E800-E807	Suicide and self-inflicted injuries	2,773	12.6
	E825-E949	All other external causes	872	3.9
	E950-E959	All causes	164,039	742.4
	E960-E999			

¹Less than 0.1 per 100,000 population.

²Per 100,000 males.

³Less than 0.1 per 100,000 live births.

⁴Per 100,000 females.

4.44 Leading causes of death, by sex at various age groups, 1973

Cause	Male		Cause	Female	
	No.	Rate ¹		No.	Rate ¹
Under 1 year			Under 1 year		
Congenital anomalies	646	365.4	Congenital anomalies	558	335.0
Anoxia and hypoxia	688	389.1	Anoxia and hypoxia	426	255.8
Immaturity	272	153.8	Immaturity	230	138.1
Pneumonia	203	114.8	Pneumonia	131	78.6
Conditions of placenta and umbilical cord	145	82.0	Conditions of placenta and umbilical cord	112	67.2
1-4 years			1-4 years		
Accidents	299	41.0	Accidents	199	28.6
Congenital anomalies	56	7.7	Congenital anomalies	93	13.4
Cancer	66	9.0	Cancer	49	7.0
Pneumonia	24	3.3	Pneumonia	26	3.7
Meningitis	17	2.3	Meningitis	9	1.3
5-19 years			5-19 years		
Accidents	2,141	63.0	Accidents	735	22.6
Cancer	229	6.7	Cancer	164	5.0
Suicide	175	5.2	Suicide	51	1.6
Congenital anomalies	77	2.3	Congenital anomalies	48	1.5
Cardiovascular diseases	53	1.6	Cardiovascular diseases	40	1.2
20-44 years			20-44 years		
Accidents	3,628	93.6	Cancer	1,021	26.9
Cardiovascular diseases	1,347	34.8	Accidents	854	22.5
Suicide	942	24.3	Cardiovascular diseases	545	14.4 ^a
Cancer	899	23.2	Suicide	332	8.7
Cirrhosis of liver	253	6.5	Cirrhosis of liver	104	2.7

4.44 Leading causes of death, by sex at various age groups, 1973 (concluded)

Cause	Male		Cause	Female	
	No.	Rate ¹		No.	Rate ¹
45-64 years			45-64 years		
Cardiovascular diseases	11,974	582.2	Cancer	5,285	250.0
Cancer	6,156	299.3	Cardiovascular diseases	4,311	203.9
Accidents	1,838	89.4	Accidents	674	31.9
Cirrhosis of liver	999	48.6	Cirrhosis of liver	415	19.6
Suicide	656	31.9	Suicide	307	14.5
65 years and over			65 years and over		
Cardiovascular diseases	32,000	3,956.5	Cardiovascular diseases	30,005	2,926.2
Cancer	11,032	1,364.0	Cancer	8,150	794.8
Pneumonia	2,112	261.1	Pneumonia	1,815	177.0
Bronchitis, emphysema and asthma	1,982	245.1	Accidents	1,139	111.1
Accidents	1,398	172.8	Bronchitis, emphysema and asthma	437	42.6
All ages			All ages		
Cardiovascular diseases	45,393	411.0	Cardiovascular diseases	34,913	315.9
Cancer	18,393	166.5	Cancer	14,675	132.8
Accidents	9,448	85.5	Accidents	3,708	33.6
Pneumonia	2,786	25.2	Pneumonia	2,255	20.4
Bronchitis, emphysema and asthma	2,735	24.8	Diabetes mellitus	1,820	16.5

¹Under one year rates are per 100,000 live births; all other age group rates are per 100,000 population.**4.45 Infant deaths and stillbirths, by province and sex, 1951-73**

Province or territory and year	Infant deaths (<1 yr)			Neonatal deaths (<28 days)					Post-neo-natal deaths (28 days to 1 yr)	Stillbirths (28+ weeks gestation)	Perinatal deaths (Stillbirths plus deaths < 7 days) ¹
	Male	Female	Total	Male	Female	Total	<7 days	7-27 days			
NEWFOUNDLAND											
<i>Number</i>											
1951	361	276	637	176	112	288	209	79	349	189	398
1961	335	253	588	197	128	325	269	56	263	281	550
1971	173	120	293	123	84	207	175	32	86	158	333
1972	148	119	267	97	77	174	161	13	93	121	282
1973	135	95	230	98	66	164	140	24	66	151	291
<i>Rate¹</i>											
1951	60.3	48.0	54.3	29.4	19.5	24.5	17.8	6.7	29.8	16.1	33.4
1961	41.7	33.5	37.7	24.5	16.9	20.8	17.3	3.6	16.9	18.0	34.7
1971	26.3	19.4	22.9	18.7	13.5	16.2	13.7	2.5	6.7	12.4	25.8
1972	22.4	18.9	20.7	14.7	12.3	13.5	12.5	1.0	7.2	9.4	21.7
1973	22.1	16.4	19.3	16.0	11.4	13.8	11.8	2.0	5.5	12.7	24.1
PRINCE EDWARD ISLAND											
<i>Number</i>											
1951	60	30	90	29	17	46	33	13	44	56	89
1961	55	38	93	29	25	54	47	7	39	46	93
1971	29	17	46	24	13	37	34	3	9	23	57
1972	22	17	39	15	11	26	22	4	13	22	44
1973	18	12	30	16	3	19	15	4	11	15	30
<i>Rate¹</i>											
1951	43.7	23.5	33.9	21.1	13.3	17.4	12.4	4.9	16.5	21.1	32.9
1961	37.4	27.8	32.8	19.7	18.3	19.0	16.6	2.5	13.8	16.2	32.2
1971	26.1	17.1	21.9	21.6	13.1	17.6	16.2	1.4	4.3	10.9	26.8
1972	20.8	17.8	19.4	14.2	11.5	12.9	10.9	2.0	6.5	10.9	21.7
1973	17.9	13.6	15.9	15.9	3.4	10.1	8.0	2.1	5.8	8.0	15.8
NOVA SCOTIA											
<i>Number</i>											
1951	344	250	594	218	134	352	298	54	242	319	617
1961	309	229	538	187	140	327	280	47	211	300	580
1971	160	105	265	108	72	180	148	32	85	139	287
1972	122	106	228	65	64	129	100	29	99	124	224
1973	113	93	206	78	57	135	107	28	71	119	226
<i>Rate¹</i>											
1951	38.9	30.2	34.7	24.7	16.2	20.6	17.4	3.2	14.1	18.6	35.4
1961	31.0	24.3	27.8	18.8	14.9	16.9	14.4	2.4	10.9	15.5	29.5
1971	21.8	15.2	18.6	14.7	10.4	12.6	10.4	2.2	6.0	9.8	19.9
1972	17.8	15.9	16.8	9.5	9.6	9.5	7.4	2.1	7.3	9.2	16.4
1973	16.6	14.3	15.5	11.5	8.8	10.2	8.1	2.1	5.3	9.0	16.9
NEW BRUNSWICK											
<i>Number</i>											
1951	472	363	835	241	199	440	334	106	395	293	627
1961	248	186	434	145	105	250	217	33	184	222	439
1971	130	74	204	97	48	145	135	10	59	138	273
1972	106	98	204	76	71	147	132	15	57	137	269
1973	105	68	173	75	47	122	113	9	51	132	245

4.45 Infant deaths and stillbirths, by province and sex, 1951-73 (continued)

Province or territory and year	Infant deaths (<1 yr)			Neonatal deaths (<28 days)					Post-neo-natal deaths (28 days to 1 yr)	Stillbirths (28+ weeks gestation)	Perinatal deaths (Stillbirths plus deaths < 7 days) ¹
	Male	Female	Total	Male	Female	Total	<7 days	7-27 days			
<i>Rate^a</i>											
1951	57.6	46.0	51.9	29.4	25.2	27.4	20.8	6.6	24.5	18.2	38.3
1961	29.1	23.0	26.2	17.0	13.0	15.1	13.1	2.0	11.1	13.4	26.1
1971	20.7	12.5	16.7	15.5	8.1	11.9	11.1	0.8	4.8	11.3	22.2
1972	17.2	17.4	17.3	12.3	12.6	12.5	11.2	1.3	4.8	11.6	22.5
1973	17.9	12.2	15.1	12.8	8.4	10.7	9.9	0.8	4.5	11.6	21.2
QUEBEC											
<i>Number</i>											
1951	3,335	2,486	5,821	1,864	1,311	3,175	2,398	777	2,646	2,768	5,166
1961	2,464	1,855	4,319	1,666	1,189	2,855	2,489	366	1,464	1,929	4,418
1971	948	692	1,640	690	500	1,190	1,059	131	450	807	1,866
1972	854	646	1,500	612	445	1,057	930	127	443	685	1,615
1973	795	583	1,378	570	425	995	874	121	383	658	1,532
<i>Rate^a</i>											
1951	53.7	42.3	48.1	30.0	22.3	26.3	19.8	6.4	21.8	22.9	41.8
1961	34.7	28.0	31.5	23.5	18.0	20.8	18.1	2.7	10.7	14.1	31.8
1971	20.6	16.0	18.4	15.0	11.6	13.3	11.9	1.5	5.0	9.0	20.7
1972	19.8	16.0	17.9	14.2	11.0	12.6	11.1	1.5	5.3	8.2	19.2
1973	18.3	14.4	16.4	13.1	10.5	11.8	10.4	1.4	4.6	7.8	18.1
ONTARIO											
<i>Number</i>											
1951	2,010	1,535	3,545	1,389	1,040	2,429	2,033	396	1,116	1,975	4,008
1961	2,090	1,536	3,626	1,507	1,120	2,627	2,378	249	999	1,870	4,248
1971	1,146	844	1,990	821	603	1,424	1,255	169	566	1,221	2,476
1972	1,103	805	1,908	796	596	1,392	1,246	146	516	1,159	2,405
1973	979	761	1,740	693	545	1,238	1,093	145	502	1,034	2,127
<i>Rate^a</i>											
1951	33.9	27.6	30.9	23.5	18.7	21.2	17.7	3.4	9.7	17.2	34.3
1961	25.9	20.0	23.0	18.7	14.6	16.7	15.1	1.6	6.3	11.9	26.6
1971	17.1	13.3	15.3	12.2	9.5	10.9	9.6	1.3	4.3	9.4	18.8
1972	17.1	13.3	15.3	12.3	9.8	11.1	10.0	1.2	4.1	9.3	19.1
1973	15.4	12.7	14.1	10.9	9.1	10.0	8.8	1.2	4.1	8.4	17.0
MANITOBA											
<i>Number</i>											
1951	369	289	658	209	169	378	301	77	280	340	641
1961	341	247	588	211	169	380	336	44	208	301	637
1971	184	132	316	117	87	204	177	27	112	164	341
1972	177	152	329	113	97	210	178	32	119	173	351
1973	164	114	278	105	64	169	145	24	109	151	296
<i>Rate^a</i>											
1951	35.6	30.2	33.0	20.1	17.7	19.0	15.1	3.9	14.0	17.0	31.6
1961	28.6	21.7	25.2	17.7	14.9	16.3	14.4	1.9	8.9	12.9	27.0
1971	20.0	15.0	17.5	12.7	9.9	11.3	9.8	1.5	6.2	9.1	18.7
1972	19.8	18.0	18.9	12.7	11.5	12.1	10.2	1.8	6.8	9.9	20.0
1973	18.7	13.9	16.4	12.0	7.8	10.0	8.5	1.4	6.4	8.9	17.3
SASKATCHEWAN											
<i>Number</i>											
1951	353	323	676	226	175	401	338	63	275	303	641
1961	373	245	618	244	151	395	334	61	223	266	600
1971	189	136	325	132	90	222	199	23	103	159	358
1972	184	116	300	124	84	208	185	23	92	140	325
1973	161	100	261	112	68	180	156	24	81	144	300
<i>Rate^a</i>											
1951	31.8	30.4	31.1	20.3	16.5	18.5	15.6	2.9	12.6	13.9	29.1
1961	30.3	21.0	25.8	19.8	12.9	16.5	13.9	2.5	9.3	11.1	24.7
1971	23.2	17.2	20.2	16.2	11.4	13.8	12.4	1.4	6.4	9.9	22.1
1972	23.3	15.3	19.4	15.7	11.1	13.4	12.0	1.5	5.9	9.0	20.8
1973	21.3	13.8	17.6	14.8	9.4	12.2	10.5	1.6	5.5	9.7	20.1
ALBERTA											
<i>Number</i>											
1951	531	358	889	345	212	557	462	95	332	402	864
1961	612	432	1,044	418	289	707	629	78	337	372	1,001
1971	325	223	548	226	162	388	334	54	160	254	588
1972	300	211	511	215	149	364	321	43	147	229	550
1973	242	174	416	153	113	266	227	39	150	206	433
<i>Rate^a</i>											
1951	38.6	27.0	32.9	25.1	16.0	20.6	17.1	3.5	12.3	14.9	31.5
1961	30.8	22.7	26.8	21.0	15.2	18.2	16.2	2.0	8.6	9.6	25.5
1971	20.5	15.2	17.9	14.3	11.0	12.7	10.9	1.8	5.2	8.3	19.1
1972	19.9	14.9	17.5	14.2	10.5	12.4	11.0	1.5	5.0	7.8	18.6
1973	16.1	12.2	14.2	10.2	7.9	9.1	7.8	1.3	5.1	7.0	14.7

4.45 Infant deaths and stillbirths, by province and sex, 1951-73 (concluded)

Province or territory and year	Infant deaths (<1 yr)			Neonatal deaths (<28 days)					Post-neo-natal deaths (28 days to 1 yr)	Stillbirths (28+ weeks gestation)	Perinatal deaths (Stillbirths plus deaths < 7 days) ¹
	Male	Female	Total	Male	Female	Total	<7 days	7-27 days			
BRITISH COLUMBIA											
Number											
1951	487	352	839	299	214	513	435	78	326	365	800
1961	534	411	945	331	264	595	515	80	350	412	927
1971	381	272	653	271	188	459	417	42	194	310	727
1972	343	237	580	224	157	381	329	52	199	238	567
1973	319	256	575	211	169	380	333	47	195	243	576
Rate ¹											
1951	33.8	25.8	29.9	20.7	15.7	18.3	15.5	2.8	11.6	13.0	28.1
1961	27.1	21.8	24.5	16.8	14.0	15.4	13.3	2.1	9.1	10.7	23.8
1971	21.2	16.1	18.7	15.1	11.2	13.2	12.0	1.2	5.6	8.9	20.7
1972	19.4	14.0	16.8	12.7	9.3	11.0	9.5	1.5	5.8	6.9	16.3
1973	18.1	15.3	16.7	12.0	10.1	11.1	9.7	1.4	5.7	7.1	16.6
YUKON TERRITORY											
Number											
1951	10	9	19	4	2	6	..	..	13	2	8
1961	13	10	23	6	4	10	7	3	13	4	11
1971	8	5	13	3	3	6	4	2	7	6	10
1972	7	5	12	4	2	6	4	2	6	6	10
1973	4	3	7	2	2	4	2	2	3	3	5
Rate ¹											
1951	57.8	53.3	55.6	23.1	11.8	17.5	..	..	38.1	5.8	23.3
1961	45.8	36.5	41.2	21.1	14.6	17.9	12.5	5.4	23.3	7.2	19.6
1971	29.0	21.7	25.7	10.9	13.0	11.9	7.9	4.0	13.8	11.9	19.5
1972	29.8	23.2	26.6	17.0	9.3	13.3	8.9	4.4	13.3	13.3	21.9
1973	19.2	14.2	16.7	9.6	9.4	9.5	4.8	4.8	7.1	7.1	11.8
NORTHWEST TERRITORIES											
Number											
1951	43	27	70	20	14	34	..	..	36	11	26
1961	73	51	124	25	14	39	22	17	85	16	38
1971	39	24	63	11	12	23	19	4	40	17	36
1972	39	21	60	15	8	23	18	5	37	12	30
1973	34	11	45	15	5	20	16	4	25	10	26
Rate ¹											
1951	135.6	81.3	107.9	63.1	42.2	52.4	..	..	55.5	16.9	39.4
1961	128.1	93.2	111.0	43.9	25.6	34.9	19.7	15.2	76.1	14.3	33.5
1971	58.8	38.4	49.0	16.6	19.2	17.9	14.8	3.1	31.1	13.2	27.6
1972	60.8	35.2	48.4	23.4	13.4	18.6	14.5	4.0	29.9	9.7	24.0
1973	52.8	19.6	37.4	23.3	8.9	16.6	13.3	3.3	20.8	8.3	21.4
CANADA											
Number											
1951	8,375	6,298	14,673	5,020	3,599	8,619	6,862	1,757	6,054	7,023	13,885
1961	7,447	5,493	12,940	4,966	3,598	8,564	7,523	1,041	4,376	6,019	13,542
1971	3,712	2,644	6,356	2,623	1,862	4,485	3,956	529	1,871	3,396	7,352
1972	3,405	2,533	5,938	2,356	1,761	4,117	3,626	491	1,821	3,046	6,672
1973	3,069	2,270	5,339	2,128	1,564	3,692	3,221	471	1,647	2,866	6,087
Rate ¹											
1951	42.7	34.0	38.5	25.6	19.4	22.6	18.0	4.6	15.9	18.4	35.8
1961	30.5	23.7	27.2	20.3	15.6	18.0	15.8	2.2	9.2	12.7	28.1
1971	19.9	15.1	17.5	14.1	10.6	12.4	10.9	1.5	5.2	9.4	20.1
1972	19.1	15.0	17.1	13.2	10.4	11.9	10.4	1.4	5.2	8.8	19.0
1973	17.4	13.6	15.5	12.0	9.4	10.8	9.4	1.4	4.8	8.3	17.6

¹Perinatal rates per 1,000 live- and still-born infants; all other rates per 1,000 live births.

4.46 Infant deaths, by age, 1973

Time of death	Deaths		Cumulative deaths		Time of death	Deaths		Cumulative deaths	
	No.	%	No.	%		No.	%	No.	%
1st day	2,146	40.2	2,146	40.2	1st month	3,692	69.2	3,692	69.2
2nd "	394	7.4	2,540	47.6	2nd "	393	7.4	4,085	76.5
3rd "	273	5.1	2,813	52.7	3rd "	324	6.1	4,409	82.6
4th "	166	3.1	2,979	55.8	4th "	288	5.4	4,697	88.0
5th "	102	1.9	3,081	57.7	5th "	170	3.2	4,867	91.2
6th "	83	1.6	3,164	59.3	6th "	119	2.2	4,986	93.4
7th "	57	1.1	3,221	60.3	7th "	99	1.9	5,085	95.2
					8th "	53	1.0	5,138	96.2
1st week	3,221	60.3	3,221	60.3	9th "	71	1.3	5,209	97.6
2nd "	231	4.3	3,452	64.7	10th "	41	0.8	5,250	98.3
3rd "	134	2.5	3,586	67.2	11th "	44	0.8	5,294	99.2
4th "	106	2.0	3,692	69.2	12th "	45	0.8	5,339	100.0

4.47 Canadian life table, 1971

Age	Male				Female			
	Number living at each age	Number dying between each age and the next	Prob-ability of dying before reaching next birthday	Expec-tation of life yr	Number living at each age	Number dying between each age and the next	Prob-ability of dying before reaching next birthday	Expec-tation of life yr
At birth	100,000		.02002	69.34	100,000		.01544	76.36
1 year	97,998	2,002	.00128	69.76	98,456	1,544	.00115	76.56
2 years	97,872	126	.00094	68.85	98,343	113	.00073	75.64
3 "	97,780	92	.00084	67.91	98,271	72	.00061	74.70
4 "	97,697	83	.00071	66.97	98,211	60	.00057	73.74
5 "	97,628	69	.00061	66.02	98,155	56	.00050	72.79
10 "	97,396	232	.00039	61.17	97,976	179	.00028	67.91
15 "	97,129	267	.00106	56.33	97,819	157	.00046	63.02
20 "	96,447	682	.00178	51.71	97,557	262	.00057	58.18
25 "	95,575	872	.00164	47.16	97,278	279	.00060	53.34
30 "	94,845	730	.00152	42.50	96,963	315	.00077	48.51
35 "	94,072	773	.00188	37.83	96,530	433	.00112	43.71
40 "	93,035	1,037	.00291	33.22	95,886	644	.00173	38.99
45 "	91,390	1,645	.00464	28.77	94,898	988	.00260	34.37
50 "	88,821	2,569	.00761	24.52	93,433	1,465	.00403	29.86
55 "	84,761	4,060	.01213	20.57	91,197	2,236	.00618	25.53
60 "	78,719	6,042	.01918	16.95	87,896	3,301	.00931	21.39
65 "	70,044	8,675	.02961	13.72	83,092	4,804	.01449	17.47
70 "	58,575	11,469	.04436	10.90	75,995	7,097	.02337	13.85
75 "	44,788	13,787	.06552	8.47	65,624	10,371	.03876	10.63
80 "	29,976	14,812	.09701	6.41	51,237	14,387	.06514	7.88
85 "	16,332	13,644	.14355	4.74	33,628	17,609	.10766	5.67
90 "	6,491	9,841	.20977	3.43	16,620	17,008	.17137	3.99
95 "	1,600	4,891	.30027	2.45	5,262	11,358	.26132	2.76
100 "	191	1,409	.41969	1.71	835	4,427	.38255	1.89

4.48 Expectation of life, 1951, 1961, 1966 and 1971 (years)

Age	1951		1961		1966		1971	
	Male	Female	Male	Female	Male	Female	Male	Female
At birth	66.33	70.83	68.35	74.17	68.75	75.18	69.34	76.36
1 year	68.33	72.33	69.50	74.98	69.53	75.71	69.76	76.56
2 years	67.56	71.55	68.63	74.11	68.64	74.81	68.85	75.64
3 "	66.68	70.66	67.71	73.18	67.71	73.88	67.91	74.70
4 "	65.79	69.74	66.78	72.23	66.77	72.93	66.97	73.74
5 "	64.86	68.80	65.83	71.27	65.82	71.97	66.02	72.79
10 "	60.15	64.02	61.02	66.41	61.00	67.12	61.17	67.91
15 "	55.39	59.19	56.20	61.51	56.16	62.22	56.33	63.02
20 "	50.76	54.41	51.51	56.65	51.50	57.37	51.71	58.18
25 "	46.20	49.67	46.91	51.80	46.94	52.52	47.16	53.34
30 "	41.60	44.94	42.24	46.98	42.29	47.68	42.50	48.51
35 "	37.00	40.24	37.56	42.18	37.62	42.88	37.83	43.71
40 "	32.45	35.63	32.96	37.45	33.01	38.15	33.22	38.99
45 "	28.05	31.14	28.49	32.82	28.55	33.51	28.77	34.37
50 "	23.88	26.80	24.25	28.33	24.31	29.02	24.52	29.86
55 "	20.02	22.61	20.30	24.01	20.38	24.70	20.57	25.53
60 "	16.49	18.64	16.73	19.90	16.81	20.58	16.95	21.39
65 "	13.31	14.97	13.53	16.07	13.63	16.71	13.72	17.47
70 "	10.41	11.62	10.67	12.58	10.83	13.14	10.90	13.85
75 "	7.89	8.73	8.21	9.48	8.37	9.94	8.47	10.63
80 "	5.84	6.38	6.14	6.90	6.36	7.26	6.41	7.88
85 "	4.27	4.57	4.46	4.89	4.79	5.16	4.74	5.67
90 "	3.10	3.24	3.16	3.39	3.60	3.60	3.43	3.99
95 "	2.24	2.27	2.20	2.32	2.71	2.48	2.45	2.76
100 "	1.60	1.59	1.49	1.56	2.04	1.69	1.71	1.89

4.49 Expectation of life at selected ages, by region or province, 1951, 1961, 1966 and 1971 (years)

Region or province and age	1951		1961		1966		1971	
	Male	Female	Male	Female	Male	Female	Male	Female
ATLANTIC PROVINCES								
At birth	66.57	70.50	68.58	73.92	..	..	..	..
1 year	69.08	72.41	70.06	75.10	..	..	..	..
20 years	51.59	54.52	52.17	56.82	..	..	..	..
40 "	33.48	35.99	33.76	37.70	..	..	..	..
65 "	13.90	15.42	14.16	16.35	..	..	..	..
NEWFOUNDLAND								
At birth	..	..	..	..	68.94	74.43	69.28	75.72
1 year	..	..	..	..	70.22	75.41	69.99	76.22
20 years	..	..	..	..	52.27	57.08	51.90	57.86
40 "	..	..	..	..	33.78	37.83	33.22	38.58
65 "	..	..	..	..	14.31	16.22	13.52	16.91
PRINCE EDWARD ISLAND								
At birth	..	..	..	..	68.32	75.51	69.30	77.35
1 year	..	..	..	..	69.43	76.22	70.10	77.64
20 years	..	..	..	..	51.56	57.88	52.04	59.36
40 "	..	..	..	..	33.49	38.77	33.83	39.96
65 "	..	..	..	..	14.43	17.57	14.40	18.41
NOVA SCOTIA								
At birth	..	..	..	..	68.34	74.80	68.66	75.97
1 year	..	..	..	..	69.16	75.43	69.05	76.13
20 years	..	..	..	..	51.32	57.16	51.02	57.77
40 "	..	..	..	..	32.99	37.96	32.80	38.50
65 "	..	..	..	..	13.80	16.75	13.58	17.14
NEW BRUNSWICK								
At birth	..	..	..	..	68.53	75.26	69.07	76.41
1 year	..	..	..	..	69.30	75.97	69.49	76.61
20 years	..	..	..	..	51.58	57.79	51.59	58.36
40 "	..	..	..	..	33.35	38.53	33.23	39.15
65 "	..	..	..	..	14.01	17.04	13.78	17.56
QUEBEC								
At birth	64.42	68.58	67.28	72.77	67.88	73.91	68.28	75.25
1 year	67.19	70.71	68.71	73.80	68.77	74.57	68.74	75.52
20 years	49.76	52.92	50.82	55.54	50.81	56.25	50.74	57.18
40 "	31.54	34.36	32.29	36.38	32.33	37.05	32.30	38.02
65 "	12.81	14.17	13.16	15.27	13.24	15.79	13.08	16.62
ONTARIO								
At birth	66.87	71.85	68.32	74.40	68.71	75.53	69.55	76.76
1 year	68.34	72.91	69.14	74.95	69.29	75.87	69.82	76.81
20 years	50.58	54.76	51.03	56.53	51.14	57.45	51.63	58.35
40 "	32.03	35.75	32.35	37.27	32.44	38.17	32.91	39.08
65 "	13.07	14.92	13.05	15.90	13.10	16.72	13.37	17.57
PRAIRIE PROVINCES								
At birth	68.36	72.28	69.79	75.66	..	..	..	..
1 year	69.90	73.43	70.96	76.40	..	..	..	..
20 years	52.24	55.53	52.90	58.08	..	..	..	..
40 "	33.86	36.63	34.37	38.83	..	..	..	..
65 "	13.88	15.51	14.22	17.00	..	..	..	..
MANITOBA								
At birth	..	..	..	..	69.80	76.11	70.16	76.93
1 year	..	..	..	..	70.54	76.57	70.60	77.21
20 years	..	..	..	..	52.48	58.25	52.67	58.88
40 "	..	..	..	..	34.11	39.10	34.18	39.66
65 "	..	..	..	..	14.18	17.42	14.32	18.02
SASKATCHEWAN								
At birth	..	..	..	..	70.45	76.45	71.05	77.59
1 year	..	..	..	..	71.49	77.06	71.76	77.98
20 years	..	..	..	..	53.50	58.80	53.82	59.62
40 "	..	..	..	..	35.22	39.61	35.59	40.51
65 "	..	..	..	..	15.00	17.59	15.44	18.54
ALBERTA								
At birth	..	..	..	..	70.10	76.24	70.42	77.30
1 year	..	..	..	..	70.82	76.72	70.90	77.52
20 years	..	..	..	..	52.70	58.30	52.94	59.17
40 "	..	..	..	..	34.36	39.09	34.60	40.06
65 "	..	..	..	..	14.46	17.34	14.64	18.24
BRITISH COLUMBIA								
At birth	66.73	72.37	68.94	75.42	69.21	75.84	69.85	76.69
1 year	67.97	73.32	69.83	76.00	69.94	76.33	70.26	76.85
20 years	50.41	55.51	51.85	57.61	51.91	58.01	52.29	58.53
40 "	32.45	36.72	33.56	38.46	33.70	38.93	34.10	39.49
65 "	13.50	15.86	13.98	16.94	14.20	17.41	14.50	18.00

4.50 Marriages and rate per 1,000 population, by province, with percentage distribution of bridegrooms and brides by birthplace, 1951, 1961, 1971 and 1973

Province or territory	Year	Total marriages	Rate per 1,000 population	Born in province where married		Born in other provinces		Born outside Canada	
				Grooms %	Brides %	Grooms %	Brides %	Grooms %	Brides %
Newfoundland	1951	2,517	7.0	85.2	96.7	2.4	1.9	12.4	1.4
	1961	3,306	7.2	88.0	97.2	3.8	1.6	8.2	1.2
	1971	4,685	9.0	91.6	95.3	4.2	3.3	4.2	1.4
	1973	5,048	9.3	91.3	95.4	5.2	3.1	3.5	1.5
Prince Edward Island	1951	583	5.9	82.3	91.1	12.9	6.0	4.8	2.9
	1961	624	6.0	81.7	89.6	15.4	7.2	2.9	3.2
	1971	961	8.6	78.9	88.1	17.4	9.5	3.7	2.4
	1973	1,014	8.8	80.2	88.2	16.3	9.7	3.5	2.1
Nova Scotia	1951	5,094	7.9	78.2	86.7	15.9	9.0	6.0	4.3
	1961	5,292	7.2	75.2	87.8	18.8	8.8	6.0	3.4
	1971	6,883	8.7	77.9	85.6	16.2	10.9	5.9	3.5
	1973	7,273	9.0	78.0	84.7	16.6	11.6	5.4	3.7
New Brunswick	1951	4,386	8.5	80.0	86.9	10.1	6.7	9.8	6.4
	1961	4,504	7.5	75.4	86.3	14.9	7.9	9.7	5.8
	1971	6,149	9.7	77.9	86.2	14.8	9.5	7.2	4.3
	1973	6,357	9.8	80.3	86.6	14.2	10.3	5.5	3.1
Quebec	1951	35,704	8.8	86.7	89.5	6.1	5.5	7.2	5.0
	1961	35,943	6.8	83.6	87.4	5.7	4.8	10.7	7.8
	1971	49,695	8.2	84.2	88.1	5.2	4.3	10.7	7.6
	1973	51,943	8.5	85.2	88.5	3.7	2.9	11.1	8.6
Ontario	1951	45,198	9.8	65.9	72.4	14.6	12.2	19.5	15.4
	1961	44,434	7.1	61.5	67.2	12.9	11.0	25.6	21.8
	1971	69,590	9.0	60.1	66.1	12.7	11.2	27.2	22.7
	1973	72,371	9.1	62.0	67.3	11.6	10.4	26.4	22.3
Manitoba	1951	7,366	9.5	67.9	75.1	15.4	13.3	16.8	11.6
	1961	6,512	7.1	66.6	74.5	18.5	14.5	14.8	11.0
	1971	9,127	9.2	67.1	75.2	17.7	13.8	15.1	11.0
	1973	9,196	9.2	68.3	74.8	17.0	14.1	14.7	11.1
Saskatchewan	1951	6,805	8.2	78.3	86.4	10.7	6.4	11.1	7.2
	1961	6,149	6.6	79.3	85.8	11.9	8.7	8.8	5.5
	1971	7,813	8.4	78.9	85.3	14.4	10.1	6.6	4.6
	1973	7,847	8.6	79.3	86.9	14.6	9.2	6.1	3.9
Alberta	1951	9,305	9.9	56.0	67.4	25.7	19.6	18.3	13.0
	1961	10,474	7.9	54.4	62.3	25.8	21.8	19.8	15.9
	1971	15,614	9.6	54.8	62.0	28.5	24.4	16.6	13.5
	1973	16,280	9.7	55.7	62.5	28.4	25.0	15.9	12.5
British Columbia	1951	11,272	9.7	35.5	41.6	43.1	43.0	21.3	15.5
	1961	10,964	6.7	36.4	45.9	35.9	32.4	27.7	21.8
	1971	20,389	9.3	43.1	50.5	32.1	29.3	24.9	20.3
	1973	21,303	9.2	43.7	50.5	32.4	29.3	23.9	20.2
Yukon Territory	1961	128	8.8	12.5	24.2	63.3	52.3	24.2	23.4
	1971	166	9.0	10.2	20.5	67.5	59.0	22.3	20.5
	1973	206	10.3	10.7	17.5	67.5	63.6	21.8	18.9
Northwest Territories	1961	145	6.3	54.5	61.4	35.9	31.7	9.7	6.9
	1971	252	7.2	41.3	55.6	43.3	33.3	15.5	11.1
	1973	226	5.9	29.2	45.6	58.0	42.9	12.8	11.5
Canada	1951	128,230	9.2	70.5	76.5	15.1	12.8	14.5	10.6
	1961	128,475	7.0	67.9	74.2	14.3	11.7	17.9	14.1
	1971	191,324	8.9	67.2	73.2	14.5	12.3	18.3	14.5
	1973	199,064	9.0	68.5	73.1	13.7	11.7	17.8	15.2

¹Excludes the Yukon Territory and Northwest Territories.

4.51 Brides and bridegrooms, by age and marital status, 1973

Age group	Brides				Bridegrooms			
	Number	Number	Number	Number	Percentage	Percentage	Percentage	Percentage
	Spinsters	Widows	Divorced	Total	Spinsters	Widows	Divorced	Total
Under 15 years	92	—	—	92	—	—	—	—
15-19	56,406	19	69	56,494	32.4	0.2	0.4	28.5
20-24	89,201	163	2,090	91,454	51.3	2.1	12.1	45.9
25-29	19,626	407	4,542	24,575	11.3	5.3	26.5	12.3
30-34	4,613	386	3,347	8,346	2.6	5.0	19.4	4.2
35-39	1,725	453	2,214	4,392	1.0	5.9	12.9	2.2
40-44	938	648	1,836	3,422	0.5	8.4	10.7	1.7
45-49	644	950	1,416	3,010	0.4	12.3	8.2	1.5
50-54	385	1,058	941	2,384	0.2	13.7	5.5	1.2
55-59	235	1,098	473	1,806	0.1	14.2	2.7	0.9
60-64	153	1,046	195	1,394	0.1	13.6	1.1	0.7
65 years and over	114	1,487	91	1,692	0.1	19.3	0.5	0.9
Total, stated ages	174,132	7,715	17,214	199,061	100.0	100.0	100.0	100.0
Age not stated	3	—	—	3	...	...	...	...
Total, all ages	174,135	7,715	17,214	199,064	...	...	...	...
Average age	yr 22.4	52.7	35.3	24.7	...	...	...	...

4.51 Brides and bridegrooms, by age and marital status, 1973 (concluded)

Age group	Bridegrooms							
	Number				Percentage			
	Bachelors	Widowers	Divorced	Total	Bachelors	Widowers	Divorced	Total
Under 15 years	—	—	—	—	—	—	—	—
15-19 "	16,109	1	5	16,115	9.3	—	—	8.1
20-24 "	99,179	41	762	99,982	57.3	0.6	4.0	50.2
25-29 "	40,989	152	3,720	44,861	23.7	2.2	19.7	22.5
30-34 "	9,349	232	4,047	13,628	5.4	3.4	21.5	6.8
35-39 "	3,286	260	2,996	6,542	1.9	3.8	15.9	3.3
40-44 "	1,793	409	2,465	4,667	1.0	6.0	13.1	2.3
45-49 "	1,099	611	1,829	3,539	0.6	8.9	9.7	1.8
50-54 "	648	842	1,418	2,908	0.4	12.3	7.5	1.5
55-59 "	397	940	839	2,176	0.2	13.7	4.4	1.1
60-64 "	252	1,037	454	1,743	0.1	15.2	2.4	0.9
65 years and over	251	2,313	336	2,900	0.1	33.9	1.8	1.5
Total, stated ages	173,352	6,838	18,871	199,061	100.0	100.0	100.0	100.0
Age not stated	3	—	—	3	...	...	...	...
Total, all ages	173,355	6,838	18,871	199,064	...	...	...	...
Average age	yr 24.9	58.4	38.7	27.3	...	...	...	...

4.52 Marriages by religious denominations of brides and bridegrooms, 1973

Denomination of bridegroom	Denomination of bride										Total marriages	Percentage of grooms
	Angli-can	Bap-tist	East-ern Orth-odox	Jewish	Lu-ther-an	Pres-by-terian	Roman Catho-lic ¹	United Church	Other sects	Not stated		
Anglican	8,198	733	137	50	665	917	5,292	4,972	1,544	36	22,544	11.3
Baptist	730	2,194	21	4	127	197	1,059	1,020	515	12	5,879	3.0
Eastern Orthodox	156	30	1,618	11	72	57	647	287	147	2	3,027	1.5
Jewish	56	9	13	1,867	10	10	175	58	110	8	2,316	1.2
Lutheran	682	153	60	11	1,425	164	1,355	1,205	499	13	5,567	2.8
Presbyterian	915	213	29	7	183	1,465	1,381	1,385	350	7	5,935	3.0
Roman Catholic ¹	5,032	906	426	116	1,196	1,163	73,021	6,447	3,584	259	92,150	46.3
United Church	4,647	1,013	211	44	1,087	1,217	6,477	15,898	1,840	31	32,465	16.3
Other sects	1,987	631	128	109	648	488	4,626	2,794	16,833	48	28,292	14.2
Not stated	53	14	4	6	26	7	166	52	49	512	889	0.4
Total	22,456	5,896	2,647	2,225	5,439	5,685	94,199	34,118	25,471	928	199,064	100.0
Percentage of brides	11.3	3.0	1.3	1.1	2.7	2.9	47.3	17.1	12.8	0.5	100.0	61.8*

¹Includes Greek Catholic.

*Percentage of marriages between persons of the same religious denomination.

4.53 Divorces¹ granted to male and female petitioners, by province, 1970-73

Province or territory	1970		1971		1972		1973	
	Male	Female	Male	Female	Male	Female	Male	Female
Newfoundland	52	88	62	88	61	116	84	140
Prince Edward Island	22	43	10	51	23	42	20	34
Nova Scotia	291	486	277	444	325	602	429	820
New Brunswick	141	238	183	299	182	284	189	385
Quebec	2,278	2,594	2,250	2,951	2,504	3,917	3,055	5,036
Ontario	4,298	7,656	4,559	7,646	4,823	8,360	5,087	8,694
Manitoba	472	779	503	880	489	924	535	1,085
Saskatchewan	293	560	300	515	296	530	298	589
Alberta	1,047	2,747	974	2,682	1,057	2,710	1,178	3,257
British Columbia	1,825	3,270	1,757	3,169	1,879	3,157	2,177	3,510
Yukon Territory	16	25	23	24	18	29	24	36
Northwest Territories	6	11	9	16	13	23	13	29
Canada	10,741	18,497	10,907	18,765	11,670	20,694	13,089	23,615

¹Only those filed under the new divorce laws of July 2, 1968.

4.54 Alleged grounds for divorce¹ by type of offence, 1970-73

Alleged grounds	1970		1971		1972		1973	
	No.	%	No.	%	No.	%	No.	%
Marital offence								
Adultery	10,070	25.7	11,261	28.5	12,645	29.6	14,853	30.3
Physical cruelty	4,704	11.9	5,102	12.9	5,579	13.0	6,598	13.5
Mental cruelty	5,244	13.4	5,677	14.4	6,308	14.7	7,734	15.8
Other	164	0.4	176	0.4	152	0.4	142	0.3
Total	20,182	51.4	22,216	56.2	24,684	57.7	29,327	59.9
Marriage breakdown by reason of:								
Addition to alcohol	896	2.3	856	2.2	859	2.0	1,032	2.1
Separation for not less than 3 years	14,938	38.1	13,874	35.1	14,803	34.6	16,197	33.1
Desertion by petitioner for not less than 5 years	2,507	6.4	1,988	5.0	1,919	4.5	1,806	3.7
Other	704	1.8	588	1.5	504	1.2	583	1.2
Total	19,045	48.6	17,306	43.8	18,085	42.3	19,618	40.1
Total, alleged grounds ²	39,227	100.0	39,522	100.0	42,769	100.0	48,945	100.0

¹See footnote to Table 4.53.
²Totals are higher than the numbers of divorces because some divorce decrees involve more than one alleged ground.

4.55 Divorces¹ by number of dependent children, 1970-73

Number of children	1970		1971		1972		1973	
	No.	%	No.	%	No.	%	No.	%
0	13,714	46.9	13,241	44.6	14,305	44.2	15,890	43.3
1	6,013	20.6	6,189	20.9	7,078	21.9	8,209	22.4
2	5,025	17.2	5,430	18.3	5,956	18.4	6,842	18.6
3	2,624	9.0	2,825	9.5	2,963	9.2	3,384	9.2
4	1,180	4.0	1,250	4.2	1,294	3.9	1,520	4.2
5 and more	682	2.3	737	2.5	768	2.4	859	2.3
Total, divorces	29,238	100.0	29,672	100.0	32,364	100.0	36,704	100.0
Average number of children	1.11	...	1.17	...	1.15	...	1.16	...

¹ See footnote to Table 4.53.

4.56 Divorces¹ by duration of marriage, 1970-73

Duration of marriage	1970		1971		1972		1973	
	No.	%	No.	%	No.	%	No.	%
Less than 1 year	58	0.2	75	0.3	84	0.3	99	0.3
1 year	390	1.3	472	1.6	524	1.6	645	1.8
2 years	834	2.9	931	3.1	1,022	3.2	1,165	3.2
3 "	1,094	3.7	1,258	4.2	1,465	4.5	1,712	4.7
4 "	1,406	4.8	1,638	5.5	1,948	6.0	2,152	5.9
Total, 1-4 years	3,724	12.7	4,299	14.4	4,959	15.3	5,674	15.6
5 years	1,388	4.7	1,687	5.7	2,020	6.2	2,403	6.5
6 "	1,430	4.9	1,586	5.3	1,924	5.9	2,237	6.1
7 "	1,479	5.1	1,468	4.9	1,717	5.3	2,146	5.8
8 "	1,350	4.6	1,471	5.0	1,523	4.7	1,900	5.2
9 "	1,251	4.3	1,270	4.3	1,465	4.5	1,664	4.5
Total, 5-9 years	6,898	23.6	7,482	25.2	8,649	26.7	10,350	28.1
10-14 years	5,655	19.3	5,631	18.9	5,905	18.2	6,490	17.7
15-19 "	4,401	15.1	4,290	14.5	4,442	13.7	4,930	13.4
20-24 "	3,615	12.4	3,438	11.6	3,518	10.9	3,896	10.6
25-29 "	2,510	8.6	2,307	7.8	2,445	7.6	2,734	7.4
30 years and over	2,319	7.9	2,123	7.2	2,323	7.2	2,502	6.8
Not stated	58	0.2	27	0.1	39	0.1	29	0.1
Total, divorces	29,238	100.0	29,672	100.0	32,364	100.0	36,704	100.0
Median duration of marriage	13.5	...	12.6	...	12.1	...	11.8	...

¹See footnote to Table 4.53.

4.57 Divorces¹ by marital status of husband and wife at time of marriage, 1970-73

Marital status	1970		1971		1972		1973	
	No.	%	No.	%	No.	%	No.	%
Husband								
Single	27,150	92.9	27,525	92.8	30,151	93.2	34,205	93.2
Widowed	525	1.8	482	1.6	470	1.4	522	1.4
Divorced	1,560	5.3	1,662	5.6	1,739	5.4	1,973	5.4
Not stated	3	--	3	--	4	--	4	--
Total	29,238	100.0	29,672	100.0	32,364	100.0	36,704	100.0
Wife								
Single	26,799	91.7	27,236	91.8	29,914	92.4	33,972	92.6
Widowed	708	2.4	712	2.4	727	2.3	734	2.0
Divorced	1,730	5.9	1,723	5.8	1,722	5.3	1,997	5.4
Not stated	1	--	1	--	1	--	1	--

¹See footnote to Table 4.53.

4.58 Immigrant arrivals, 1947-73

Year	Arrivals	Year	Arrivals	Year	Arrivals
1947	64,127	1956	164,857	1965	146,758
1948	125,414	1957	282,164	1966	194,743
1949	95,217	1958	124,851	1967	222,876
1950	73,912	1959	106,928	1968	183,974
1951	194,391	1960	104,111	1969	161,531
1952	164,498	1961	71,689	1970	147,713
1953	168,868	1962	74,586	1971	121,900
1954	154,227	1963	93,151	1972	122,006
1955	109,946	1964	112,606	1973	184,200

4.59 Immigrant arrivals, by country of last permanent residence, 1972 and 1973

Country of last permanent residence	1972	1973	Country of last permanent residence	1972	1973
Europe	51,293	71,883	Asia (concluded)		
Austria	365	764	Indonesia	107	259
Belgium	447	589	Iran	174	272
British Isles	18,197	26,973	Iraq	99	65
England	12,520	19,979	Israel	620	984
Northern Ireland	2,048	2,263	Japan	718	1,105
Scotland	3,270	4,038	Jordan	147	267
Wales	323	662	Korea, South	1,280	1,553
Lesser Isles	36	31	Lebanon	996	1,325
Czechoslovakia	154	93	Malaysia	368	647
Denmark	326	434	Pakistan	1,190	2,285
Finland	275	323	Philippines	3,946	6,757
France	2,742	3,586	Singapore	166	233
Germany, Federal Republic of	2,025	2,564	Sri Lanka	240	405
Greece	4,016	5,833	Syria	170	241
Hungary	322	400	Taiwan	859	1,372
Ireland, Republic of	936	1,129	Vietnam, South	154	418
Italy	4,608	5,468	Other Asia	401	607
Malta	414	672	North and Central America	31,836	45,946
Netherlands, The	1,471	1,898	Antigua	121	196
Norway	134	202	Bahamas	102	235
Poland	1,321	1,261	Barbados	534	800
Portugal	8,737	13,483	Bermuda	120	282
Spain	523	688	Grenada	153	352
Sweden	489	654	Haiti	936	2,178
Switzerland	778	953	Jamaica	3,092	9,363
Turkey	506	420	Mexico	624	662
USSR	315	427	St. Kitts, Nevis	97	164
Yugoslavia	2,047	2,873	St. Vincent	178	387
Other Europe	145	196	Trinidad and Tobago	2,739	5,138
Africa	8,308	8,307	United States	22,618	25,242
Egypt, Republic of	606	905	Other North and Central America		
Ghana	92	242	America	522	947
Kenya	320	1,193	South America	4,309	11,057
Morocco	236	499	Argentina	381	1,304
Nigeria	134	338	Bolivia	52	60
South Africa, Republic of	440	766	Brazil	351	618
Tanzania	1,105	1,688	Chile	294	493
Uganda	5,021	2,056	Colombia	210	976
Zambia	78	92	Ecuador	171	1,177
Other Africa	276	528	French Guiana	5	2
Australasia	2,148	2,671	Guyana	1,976	4,808
Australia	1,694	2,096	Paraguay	198	174
New Zealand	449	461	Peru	251	499
Other Australasia	5	114	Surinam	13	44
Asia	23,325	43,193	Uruguay	243	634
Bangladesh	103	151	Venezuela	164	268
China	25	60	Oceania	787	1,143
Cyprus	216	322	Fiji	636	987
Hong Kong	6,297	14,662	Mauritius	127	123
India	5,049	9,203	Other Oceania	24	33
			Total, all countries	122,006	184,200

4.60 Immigrant arrivals, by country of citizenship, 1972 and 1973

Country of citizenship	1972	1973	Country of citizenship	1972	1973
Australia	1,387	1,681	New Zealand	464	496
Austria	251	286	Norway	122	203
Belgium	296	306	Pakistan	1,347	2,425
Britain and colonies	24,217	38,279	Philippines	4,050	6,722
Central America	967	432	Poland	1,403	1,361
China	2,789	4,279	Portugal	9,402	14,664
Czechoslovakia	246	163	South Africa	439	666
Denmark	299	384	South America	3,994	8,895
Egypt	691	957	Spain	493	708
Finland	295	350	Sri Lanka	293	488
France	2,023	2,611	Sweden	361	520
Germany, Federal Republic of	1,552	1,961	Switzerland	610	696
Greece	4,054	5,842	Trinidad and Tobago	2,756	5,154
Haiti	1,056	2,336	Turkey	523	424
Hungary	373	521	Union of Soviet Socialist Republics	319	293
India	5,754	10,130	United States	21,497	24,081
Ireland, Republic of	1,123	1,406	Yugoslavia	2,531	3,455
Israel	581	959	Other African	3,987	4,827
Italy	4,809	6,115	Other Asian	4,535	4,609
Jamaica	3,204	9,542	Other European	589	678
Japan	684	1,020	Stateless	2,480	3,042
Lebanon	899	1,161	Other	14	6,101
Mexico	601	615			
Morocco	272	539			
Netherlands, The	1,374	1,817	Total	122,006	184,200

4.61 Intended province of destination of male and female immigrants, 1972 and 1973

Province or territory	1972			1973		
	Male	Female	Total	Male	Female	Total
Newfoundland	342	344	686	537	447	984
Prince Edward Island	84	91	175	128	145	273
Nova Scotia	930	942	1,872	1,252	1,296	2,548
New Brunswick	636	665	1,301	848	881	1,729
Quebec	9,343	9,249	18,592	13,877	12,994	26,871
Ontario	31,171	32,634	63,805	53,068	50,119	103,187
Manitoba	2,350	2,912	5,262	3,392	3,229	6,621
Saskatchewan	747	764	1,511	974	892	1,866
Alberta	4,266	4,124	8,390	6,373	5,531	11,904
British Columbia	10,048	10,059	20,107	14,191	13,758	27,949
Yukon Territory and Northwest Territories	153	152	305	128	140	268
Canada	60,070	61,936	122,006	94,768	89,432	184,200

4.62 Sex distribution of immigrants, 1970-73

Year	Male	Female	Total
1970	74,257	73,456	147,713
1971	60,444	61,456	121,900
1972	60,070	61,936	122,006
1973	94,768	89,432	184,200

4.63 Marital status of immigrant arrivals, by sex and age group, 1973

Sex and age group	Single	Married	Widowed	Divorced	Separated	Total
Male						
0-4 years	7,266	—	—	—	—	7,266
5-9 "	7,409	—	—	—	—	7,409
10-14 "	5,437	—	—	—	—	5,437
15-19 "	6,802	70	—	—	—	6,872
20-24 "	14,937	3,251	2	33	28	18,251
25-29 "	10,878	8,825	8	175	125	20,011
30-34 "	2,888	7,681	22	203	109	10,903
35-39 "	933	5,352	16	137	83	6,521
40-44 "	379	3,246	24	80	60	3,789
45-49 "	178	2,075	31	73	48	2,405
50-54 "	70	1,436	37	42	31	1,616
55-59 "	54	1,021	60	31	22	1,188
60-64 "	39	1,108	84	13	11	1,255
65-69 "	27	762	103	13	13	918
70 years and over	31	606	258	22	10	927
Total, male	57,328	35,433	645	822	540	94,768
Female						
0-4 years	6,936	—	—	—	—	6,936
5-9 "	6,902	—	—	—	—	6,902
10-14 "	5,174	10	—	—	—	5,184
15-19 "	6,112	1,656	—	1	2	7,771

4.63 Marital status of immigrant arrivals, by sex and age group, 1973 (concluded)

Sex and age group	Single	Married	Widowed	Divorced	Separated	Total
Female (concluded)						
20-24 "	10,482	8,295	11	60	70	18,918
25-29 "	5,743	9,492	35	244	140	15,654
30-34 "	1,881	6,185	41	200	120	8,427
35-39 "	789	3,730	72	169	84	4,844
40-44 "	401	2,309	125	141	93	3,069
45-49 "	280	1,703	257	141	88	2,469
50-54 "	192	1,327	416	109	94	2,138
55-59 "	145	1,051	608	69	77	1,950
60-64 "	128	889	781	50	61	1,909
65-69 "	115	513	700	43	32	1,403
70 years and over	189	354	1,245	45	25	1,858
Total, female	45,469	37,514	4,291	1,272	886	89,432

4.64 Intended occupations of immigrants, 1972 and 1973

Intended occupation	1972	1973	Intended occupation	1972	1973
WORKERS					
Managerial (owners, managers, officials)	4,368	5,464	WORKERS (concluded)		
Professional and technical	15,262	19,112	Water transport	93	127
Professional engineers			Road transport	470	799
Civil	289	450	Other	11	29
Mechanical	435	563	Communication trades	141	217
Industrial	440	185	Commercial sales	2,076	3,092
Electrical	364	440	Auctioneers, canvassers	4	38
Mining	81	72	Pedlars, commercial travellers	402	611
Chemical	147	217	Sales clerks, salesmen	1,665	2,436
Other	99	87	Other	5	7
Physical scientists			Financial sales	384	565
Chemists	295	433	Service and recreation	6,575	11,917
Geologists	178	131	Protective service	110	270
Physicists	88	125	Cooks	1,075	2,013
Other	18	55	Domestic servants	2,723	4,618
Biologists and agricultural professionals			Nurses' aides	467	1,085
Biological scientists	244	319	Waiters, porters	928	1,789
Veterinarians	42	77	Athletes, entertainers	228	283
Other	130	137	Other	1,044	1,859
Teachers			Farmers and farm workers	2,127	3,068
Professors, principals	1,031	1,481	Loggers and related workers	77	147
School teachers	1,797	1,592	Fishermen, hunters, trappers	16	64
Other instructors	203	139	Miners, well drillers	144	173
Health professionals			Construction trades	3,831	5,367
Physicians, surgeons	988	1,170	Carpenters	985	1,678
Dentists	87	72	Plumbers	264	460
Nurses, graduate	892	1,418	Electricians	691	930
Therapists	159	274	Painters, glaziers	334	655
Pharmacists	73	138	Bricklayers, stonemasons	512	1,053
Medical and dental technicians	674	811	Cement and concrete workers	91	132
Other	308	38	Plasterers, lathers	76	124
Law professionals	42	49	Sheet metal workers	123	155
Religion professionals	348	517	Other (excl. labourers)	755	180
Artists, writers, musicians			Manufacturing and mechanical trades	11,558	21,029
Commercial artists	101	192	Food workers	426	529
Art teachers	81	145	Rubber workers	17	47
Authors, editors, journalists	244	312	Leather workers	108	267
Musicians, music teachers	364	432	Textile workers	157	433
Other professionals			Tailors, furriers	3,274	5,448
Architects	112	90	Woodworkers, sawyers	447	890
Draughtsmen	733	1,016	Paper and chemical workers	27	74
Surveyors	82	109	Printers, bookbinders	257	374
Actuaries, statisticians	338	114	Furnacemen, moulders	141	226
Economists	262	301	Jewellers, watchmakers	168	312
Computer programmers	17	686	Machinists	2,370	5,624
Accountants, auditors	475	675	Mechanics, repairmen	2,732	4,241
Dietitians	54	75	Electrical and electronic workers	487	780
Social workers	354	398	Painters (excl. construction)	128	284
Librarians	104	141	Clay, glass, stone workers	71	118
Interior decorators	97	135	Stationary enginemen	203	397
Photographers	135	149	Freight handlers	32	57
Science technicians	1,447	2,168	Other	513	928
Other	810	984	Labourers	1,184	2,734
Clerical	8,549	13,422	Not stated and unknown	2,486	4,813
Bookkeepers, cashiers	1,384	3,868	Total, workers	59,432	92,228
Storekeepers, shipping clerks	375	709	NON-WORKERS		
Stenographers, typists	2,791	5,122	Spouses	21,749	27,530
Other	3,999	3,723	Children	30,977	44,149
Transportation trades	654	1,044	Other	9,848	20,293
Aircraft operators	70	72	Total, non-workers	62,574	91,972
Railroad operators	10	17	Total, immigrants	122,006	184,200

4.65 Canadian-born persons entering the United States from Canada and elsewhere, and total persons entering the United States from Canada, years ended June 30, 1965-74¹

Year	Entering US from Canada		Canadian-born entering US from elsewhere	Year	Entering US from Canada		Canadian-born entering US from elsewhere
	Canadian-born	Total			Canadian-born	Total	
1965	37,519	50,035	808	1970	13,466	26,850	338
1966	27,707	37,273	651	1971	12,847	22,709	281
1967	22,729	34,768	713	1972	10,543	18,596	233
1968	27,189	41,716	473	1973	8,680	14,800	271
1969	18,196	29,303	386	1974	7,297	12,301	357

¹Includes only persons who have declared their intention of remaining permanently in the US when applying for a visa.

4.66 Internal migration of Canadian-born population, by province of birth and by province of residence, 1971 (thousands)

Province or territory of birth	Province or territory of residence, 1971											Total (place of birth)
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT and NWT	
Newfoundland	496	1	17	4	7	60	2	1	2	5	--	594
Prince Edward Island	--	95	7	5	3	20	1	1	3	3	--	139
Nova Scotia	4	4	661	26	21	116	5	3	12	21	--	874
New Brunswick	2	3	20	539	49	81	3	2	7	12	--	718
Quebec	3	1	10	16	5,303	252	9	6	18	31	1	5,650
Ontario	5	3	24	15	137	5,210	40	27	60	107	2	5,630
Manitoba	--	--	3	2	14	91	702	36	53	107	2	1,011
Saskatchewan	--	--	3	1	8	81	53	710	145	178	3	1,183
Alberta	--	--	3	2	7	43	13	20	1,003	162	6	1,260
British Columbia	--	--	3	1	7	39	8	9	41	1,056	5	1,170
Yukon Territory and Northwest Territories	--	--	--	--	2	4	1	1	3	4	28	43
Total (place of residence)	513	108	752	611	5,559	5,996	837	815	1,346	1,688	48	18,273

4.67 Population 5 years and over, by migration status for the period 1966-71, by province, 1971

Migration status (based on residence as at June 1, 1966)	Province of residence as at June 1, 1971													
	Nfld.		PEI		NS		NB		Que.		Ont.			
	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%		
Non-migrants	380	82.7	81	80.7	575	80.6	468	81.5	4,417	79.7	5,291	75.0		
Non-movers ¹	303	65.9	67	66.5	435	61.0	355	61.9	3,063	55.3	3,579	50.7		
Movers within same municipality	77	16.8	14	14.2	140	19.6	113	19.6	1,354	24.4	1,712	24.3		
Migrants ²	79	17.3	20	19.3	138	19.4	106	18.5	1,125	20.3	1,765	25.0		
Within same province	56	12.1	8	8.2	69	9.7	53	9.2	836	15.1	995	14.1		
From different province	13	3.0	9	8.4	46	6.5	37	6.4	78	1.4	241	3.4		
From outside Canada	4	0.9	2	1.5	13	1.8	9	1.6	138	2.5	439	6.2		
Province of residence in 1966 not stated	6	1.3	1	1.3	10	1.4	7	1.3	73	1.3	90	1.3		
Total ³	459	100.0	101	100.0	713	100.0	574	100.0	5,542	100.0	7,055	100.0		
	Man.		Sask.		Alta.		BC		YT and NWT		Canada			
	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%		
Non-migrants	702	78.0	670	79.1	1,073	72.8	1,313	65.5	27	58.8	14,996	76.1		
Non-movers ¹	488	54.2	499	58.9	715	48.5	857	42.7	11	24.2	10,371	52.6		
Movers within same municipality	214	23.8	171	20.2	358	24.3	456	22.8	16	34.6	4,625	23.5		
Migrants ²	198	22.0	177	20.9	401	27.2	693	34.5	19	41.2	4,721	23.9		
Within same province	98	10.9	119	14.0	190	12.9	340	16.9	2	5.0	2,766	14.0		
From different province	57	6.3	36	4.3	128	8.6	194	9.7	12	26.8	852	4.3		
From outside Canada	32	3.5	12	1.4	60	4.1	115	5.7	2	4.0	824	4.2		
Province of residence in 1966 not stated	12	1.3	10	1.2	23	1.6	44	2.2	3	5.4	279	1.4		
Total ³	900	100.0	846	100.0	1,474	100.0	2,006	100.0	46	100.0	19,717	100.0		

¹Persons living in same dwelling as at June 1, 1966 and June 1, 1971.

²Persons whose residence as at June 1, 1971 was in a different municipality than as at June 1, 1966.

³Excludes persons in the Armed Forces or in other government service, stationed outside Canada.

4.68 Migrant¹ population 5 years and over, by type and locality of residence in 1966 and 1971

Locality of residence in 1966	Locality of residence in 1971				Total migrants (by residence in 1966)
	Census metro- politan areas ²	Other urban local- ities	Rural localities ³		
			Predom- inantly non-farm	Predom- inantly farm	
	<i>Number (thousands)</i>				
Census metropolitan areas ²	1,220	297	202	64	1,783
Other urban localities	417	347	197	61	1,023
Rural localities ³					
Predominantly non-farm	196	201	125	38	560
Predominantly farm	71	82	35	28	217
Outside of Canada	666	99	47	12	824
Residence in 1966 not stated	168	81	51	15	315
Total migrants (by residence in 1971)	2,738	1,107	657	218	4,720
	<i>Percentage distribution (residence in 1966)</i>				
Census metropolitan areas ²	44.6	26.8	30.7	29.3	37.8
Other urban localities	15.2	31.4	30.0	28.1	21.7
Rural localities ³					
Predominantly non-farm	7.1	18.1	19.1	17.3	11.9
Predominantly farm	2.6	7.6	5.3	12.9	4.6
Outside of Canada	24.3	8.9	7.1	5.4	17.4
Residence in 1966 not stated	6.1	7.3	7.8	6.9	6.7
Total migrants (by residence in 1971)	100.0	100.0	100.0	100.0	100.0
	<i>Percentage distribution (residence in 1971)</i>				
Census metropolitan areas ²	68.4	16.6	11.3	3.6	100.0
Other urban localities	40.8	34.0	19.3	6.0	100.0
Rural localities ³					
Predominantly non-farm	35.0	35.9	22.4	6.8	100.0
Predominantly farm	32.8	38.1	16.1	13.0	100.0
Outside of Canada	80.9	12.0	5.7	1.4	100.0
Residence in 1966 not stated	53.3	25.6	16.3	4.8	100.0
Total migrants (by residence in 1971)	58.0	23.5	13.9	4.6	100.0

¹See footnote 2, Table 4.67.²As defined for the 1971 Census (see text in Section 4.2.1).³Rural figures exclude a very small part of the rural population living within the fringe boundaries of census metropolitan areas. Predominantly farm localities are those municipalities in which the majority of the population live on farms (as defined in the 1971 Census of Agriculture). The converse is true of predominantly non-farm localities.

Sources

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4.3,4.6,4.9,4.14,4.65 Population Estimates and Projections Division, Census Field, Statistics Canada.

4.22 Communications Division, Program Co-ordination and Administration Branch, Department of Indian Affairs and Northern Development.

4.32 - 4.57 Health and Welfare Division, Household and Institutional Statistics Field, Statistics Canada.

4.58 - 4.64 Canada Immigration Division, Department of Manpower and Immigration.

Chapter 5

Health

5.1 Federal health services

Under the British North America Act, responsibility for administration of health services is the direct concern of provincial governments, with municipalities sometimes exercising considerable influence over matters delegated to them by provincial legislatures. Although patterns of health services in different provinces are similar, their organization, system of financing, and administration vary from province to province.

On the national level, the Department of National Health and Welfare is the chief federal agency responsible for the promotion, preservation, and restoration of the health of Canadians, and for social security and social welfare, in conjunction with other federal agencies and with provincial and local services. The health side of the Department, under the Deputy Minister of National Health, is organized into five branches: Health Protection, Medical Services, Health Programs, Long Range Health Planning, and Fitness and Amateur Sport. In addition, there is the Medical Research Council, which reports to Parliament through the Minister of National Health and Welfare.

The Health Protection Branch provides services to protect the Canadian public from health hazards of all types. It is composed of eight organizational units: Foods, Drugs, Environmental Health, Non-medical Use of Drugs, Laboratory Centre for Disease Control, Field Operations, Planning and Evaluation, and Administration.

The Health Programs Branch administers federal aspects of Canada's two major health programs, hospital and medical insurance; supports health-care-delivery-system and resource development; undertakes health promotion; and both supports and conducts research. This Branch is made up of the following units: Program Development and Evaluation, Health Insurance, Research Programs, Health Manpower, Health Facilities Design, Health Systems, Health Standards and Consultants, Community Health, and Health Economics and Management Services.

The Medical Services Branch has direct responsibility for the health care and public health services of Indians and Inuit and of all residents of the Yukon Territory and Northwest Territories, as well as for quarantine and immigration medical services, public service health, a national prosthetics service, and civil aviation medicine.

The purpose of the Fitness and Amateur Sport Branch is to encourage, promote, and develop fitness and amateur sport by enhancing the competitive excellence of Canada's athletes and by encouraging participation in activities oriented to fitness and recreation.

The Long Range Health Planning Branch is concerned with assessing the orientation of health services and the organization of resources.

Other federal agencies carry out specialized health functions; for example, Statistics Canada is responsible for gathering vital and other health statistics, the Department of Veterans Affairs administers hospitals and health services for war veterans, and the Canada Department of Agriculture has certain responsibilities connected with health aspects of food production.

In April 1974 the Department of National Health and Welfare produced a working document entitled *A new perspective on the health of Canadians*. While underlining the high level of development of our health care system, this document stressed the tremendous amount of work that remains to be done to protect and improve the health of Canadians and to prevent the principal causes of morbidity and mortality in our times, such as lung cancer, cardiovascular disease, traffic accidents, etc. The analysis contained in the document also emphasized man's social and physical environments and his lifestyle as important areas of concern in promoting health. In January 1975 the health ministers of the federal and provincial governments decided to set up a committee to define priorities for action.

5.1.1 Health care

Public medical care. The Medical Care Act was passed by Parliament in December 1966 and federal contributions to participating provinces became payable from July 1, 1968. As at April

1, 1972 all provinces and territories had entered the federal program. Under the Act federal government contributions to the provinces are based on half of the per capita cost of the insured services of the national program furnished under the plans of all provinces, excluding administration, multiplied by the number of insured persons in each province. The minimum criteria to be met are described in the following paragraphs.

Comprehensive coverage must be provided for all medically required services rendered by a physician or surgeon. There can be no dollar limit or exclusion except on the ground that the service was not medically required. The federal program includes not only those services that have been traditionally covered as benefits to a greater or lesser extent by the health insurance industry, but also those preventive and curative services that have been traditionally covered through the public sector in each province, such as medical care of patients in mental and tuberculosis hospitals and services of a preventive nature provided to individuals by physicians in public health agencies.

The plan must be universally available to all eligible residents on equal terms and conditions and cover at least 95% of the total eligible provincial population (in fact the plans cover over 99% of those eligible). This "uniform terms and conditions" clause is intended to ensure that all residents have access to coverage and to prevent discrimination in premiums on account of previous health, age, non-membership in a group, or other considerations. If a premium system of financing is selected, subsidization in whole or in part for low-income groups is permitted. It has been left to the individual province to determine whether its residents should be insured on a voluntary or compulsory basis. Utilization charges at the time of service are not precluded by the federal legislation if they do not impede, either by their amount or by the manner of their application, reasonable access to necessary medical care, particularly for low-income groups. The plan must provide portability of benefit coverage when the insured resident who has paid his premiums, if any, is temporarily absent from the province and when moving residence to another participating province. The provincial medical care insurance plan must be administered on a non-profit basis by a public authority that is accountable to the provincial government for its financial transactions. It is permissible for provinces to assign certain administrative functions to private agencies.

These criteria leave substantial flexibility with each province to determine its own administrative arrangements for the operation of its medical care insurance plan and to choose the way in which it will be financed, i.e. through premiums, sales tax, other provincial revenues, or by a combination of methods. Federal contributions to the provinces under this program totalled \$678 million in the fiscal year 1973-74.

Provincial programs providing health care services (apart from those already insured under the Medical Care Act) for welfare recipients establishing eligibility on the basis of financial need are supported financially by the federal program known as the Canada Assistance Plan. This program provides for federal payment of half the cost of personal health care services, as well as welfare services. The provinces are free to make available a wide range of health care benefits.

Hospital insurance. Provincial hospital insurance programs, operating in all provinces and territories since 1961, cover 99% of the population of Canada. Under the Hospital Insurance and Diagnostic Services Act of 1957, the federal government shares with the provinces the cost of providing specified hospital services to patients insured by these programs. Specifically excluded are tuberculosis hospitals and sanatoria, hospitals or institutions for the mentally ill, and institutions providing custodial care, such as nursing homes and homes for the aged. The methods of administering and financing the program in each province and the provision of services above the stipulated minimum required by the Act are left to the province.

Insured in-patient services must include accommodation, meals, necessary nursing service, diagnostic procedures, most pharmaceuticals, the use of operating rooms, case rooms, anaesthesia facilities, and radiotherapy and physiotherapy if available. Similar out-patient services may be included in provincial plans and authorized for contribution under the Act. All provinces include some out-patient services, and most cover a fairly comprehensive range. The Government of Canada contributes to each province out of the Consolidated Revenue Fund the sum of 25% of the per capita cost of in-patient services in Canada and 25% of the per capita cost of in-patient services in the province, multiplied by the average number of insured persons in that province. Thus, the total contribution is about 50% of the sharable cost for all

Canada, but the proportion of federal support is higher in provinces where the per capita cost is below the national average and lower in the other provinces. Contributions for insured out-patient services in each province are paid in the same proportion as the contributions to the cost for in-patients.

Under the Established Programs (Interim Arrangements) Act, a province could, prior to October 31, 1965, have contracted out of various federal-provincial programs, including hospital insurance, and on January 1, 1965, Quebec did so. Accordingly, the federal contribution to the Quebec hospital insurance program is made through tax abatement and not under the Hospital Insurance Act. Federal payments to the provinces (including Quebec) under this program for the fiscal year 1973-74 amounted to \$1,517 million.

Health Manpower Development. The purpose of the federal Health Manpower Development Program is to improve and maintain, through the collaboration of federal and provincial governments and other concerned agencies, the quality, supply, distribution, and productivity of all health manpower in Canada at a level that makes possible the delivery of effective and efficient total health services.

The program includes the administration of the Health Resources Fund Act of 1966 which provided a Fund of \$500 million over a 15-year period (1966-80) to provide financial assistance in the planning, acquisition, construction, renovation, and equipping of health training and research facilities. Up to 50% of eligible costs of approved projects are supported by federal contributions. Of the total amount, \$400 million is allocated to provinces on a per capita basis, \$25 million is further allocated to the Atlantic provinces for joint projects, and \$75 million for support of health training and research projects of national significance. The program also includes the administration of the Professional Training Grant, which provides assistance to the provinces in an extended program for the training of health and hospital personnel.

Community health. The federal community health program is aimed at promoting lifestyles that will improve personal health, and the development of comprehensive community health services readily accessible to all Canadians. The Health Promotion Division of the Community Health Directorate develops health-promotion and education services as essential components of community health services, seeks to increase public awareness of health responsibilities, and works with health agencies to improve personal health.

The Community Health Services Development Division of the Directorate is concerned with consulting, planning, developing, and evaluating community health services and centres. The main thrust is to promote community health services as identified in the Castonguay-Nepveu Report, the Manitoba White Paper, the Hastings Report, and others; to facilitate co-ordination of community health-services planning; and to encourage shifts in emphasis from institutional care to ambulatory care, and from curative services to health-promotional and preventive services.

Health services for specific groups. Through its Medical Services Branch, the Department of National Health and Welfare provides or arranges for several types of medical and health service for persons whose care is by custom or legislation a federal responsibility.

Indians, as residents of a province or territory, are entitled to the benefits of medical care and hospital insurance. These insured benefits are supplemented by Medical Services, which assists Indian bands in arranging for transportation and in obtaining drugs and prostheses. Emphasis is placed on a comprehensive public health program which provides dental care for children, immunization, school health services, health education, and prenatal, postnatal and well-baby clinics. Through direct financial assistance to organizations of native peoples, support is given to Indian programs directed toward improving the quality of life by means of adult education, family planning, accident prevention, venereal disease control programs, and the suppression of alcoholism and drug abuse. Since Indians comprise only 1% of the Canadian population and are distributed widely throughout Canada, a network of specially designed health facilities has been constructed in almost 200 communities that would otherwise lack health facilities. Approximately 60 of these are nursing stations, 91 are health centres, 46 are out-patient clinics, and nine are hospitals.

Increasing numbers of Indians are being trained and employed in the public health and medical care programs to facilitate understanding and health activities in local communities.

With the exception of insured hospital and medical care programs, which are administered by the Yukon and Northwest Territories governments, the Department of National Health and Welfare manages health services for all residents of the two northern territories. The services comprise all normal health department activities including a comprehensive public health program, special arrangements to facilitate inter-station communication, and the transportation of patients from isolated communities to referral medical centres. Several university groups have interests in delineated zones for the provision on a rotation basis of medical personnel and students. Their activities are supported financially through government contracts and medical care insurance. Departmental facilities include four hospitals, two nursing stations, five health stations, and three health centres in the Yukon Territory and four hospitals, 38 nursing stations, seven health stations and seven health centres in the Northwest Territories.

Under the Quarantine Act, all vessels, aircraft, and other conveyances and their crews and passengers arriving in Canada from foreign countries are subject to inspection by quarantine officers to detect and correct conditions that could lead to the entry into Canada of such diseases as smallpox, cholera, plague, and yellow fever. Fully organized quarantine stations are located at all major seaports and airports. The Branch is responsible for enforcing standards of hygiene on federal property including ports and terminals, interprovincial means of transport, and Canadian ships and aircraft.

Under the Department of National Health and Welfare Act and the Immigration Act, the Medical Services Branch determines in Canada and other countries the health status of all persons referred to them by the Department of Manpower and Immigration for Canadian immigration purposes and, additionally, provides or arranges health care services for certain persons after arrival in Canada, including immigrants who become ill en route to their destination or while seeking employment.

The Medical Services Branch is responsible for a comprehensive occupational health program for federal employees throughout the country and abroad. This service includes health counselling, surveillance of the occupational and working environment, pre-employment, periodic and special examinations, first aid and emergency treatment, and a wide range of advisory services and special health programs.

The Department provides an advisory service to the Ministry of Transport concerning the health and safety of all those involved in Canadian civil aviation. Regional and headquarters aviation medical officers review all medical examinations, participate in aviation safety programs, and assist in air accident investigations. Close liaison with authorities responsible for foreign aviation medicine is maintained as standards are usually based upon international agreements.

The objectives of Prosthetic Services are to make available high quality services in prosthetic and orthotic rehabilitation under the terms of agreements in effect with the provinces and with the Department of Veterans Affairs, and to provide a national focal point for expertise in this field.

A number of Medical Services physicians provide an assessment and advisory service to the Unemployment Insurance Commission in relation to claims for benefits under the Sickness and Maternity Benefit Plan. The Canada Pension Plan maintains its own disability assessment service.

Emergency Health Services prepares plans to ensure that the health component of the Department is able to continue operating in the event or threat of nuclear attack and to advise, assist and stimulate provincial and municipal health departments in emergency health planning for both peacetime and wartime emergencies.

5.1.2 Health protection

Through the Health Protection Branch, the Department is responsible for developing an integrated program to protect the public against unsafe foods, drugs, cosmetics, medical and radiation emitting devices, against harmful microbial agents and technological and social environments deleterious to health, against environmental pollutants and contaminants of all kinds, and against fraudulent drugs and devices.

The Branch contains six operational directorates — Foods, Drugs, Environmental Health, Laboratory Centre for Disease Control, Non-medical Use of Drugs, and Field

Operations. It is responsible for enforcing the Food and Drugs Act and Regulations, the Narcotic Control Act and Regulations, the Proprietary or Patent Medicine Act, and the Radiation Emitting Devices Act and Regulations.

Food. Standards of safety and purity are developed through laboratory research and maintained by means of a regular and widespread inspection program. The inspection of food-manufacturing establishments plays a major role in the production of clean, wholesome foods containing ingredients that meet recognized standards. Changing food technology requires the development of methods of laboratory analysis to ensure the safety of new types of ingredients and packaging materials. The Food and Drug Regulations list chemical additives that may be used in foods, the amounts that may be added to each food, and the underlying reason. Information on new additives must be submitted for careful review before they are included in the permitted list. Considerable emphasis is placed on studies to ensure that the levels of pesticide residues in foods do not constitute a health hazard. The effect of new packaging and processing techniques on the bacteria associated with food spoilage is also of special concern.

Human nutrition. The field work for Nutrition Canada, the first survey of the nutritional health of Canadians throughout the country, was completed in the fall of 1972 in collaboration with the provinces. This consisted of physical and dental examinations, anthropometric measurements, detailed dietary studies and biochemical tests on blood and urine samples from approximately 20,000 people representative of the populations of all provinces and the banded Indian and Inuit population segments. The first report of results, released on November 6, 1973, was an overview of the nutritional status of the general, Indian and Inuit populations. This revealed a very high prevalence of obesity. It also revealed that some members of the population had sub-optimal intakes and/or amounts in blood or urine of certain vitamins and minerals, particularly iron, vitamin D, vitamin C and folic acid. The nutritional status of native peoples was worse than that of the general population. Vitamin C deficiency was particularly common among Inuit. Goitre of unknown cause (but not related to iodine deficiency) was frequently observed, particularly in the prairie region. Protein status was generally satisfactory. Individual detailed reports on the findings in each province and for the Indian and Inuit groups have been released, and will be followed by reports on food consumption patterns, dental health, and anthropometry. National priorities for corrective action to improve nutritional status have been developed, and are beginning to take shape. These involve all parts of the national community — the federal, provincial, and local governments, industry, the health professional, educational activities, and the consumer at the community level.

Drugs. The Health Protection Branch regulates both the manufacture and distribution of drugs in Canada. The conditions under which drugs are to be manufactured are described in the Manufacturing Facilities and Control Regulations. They relate to facilities, employment of qualified personnel, quality control procedures, maintenance of records, and a suitable system to enable a complete and rapid recall of any batch of drugs from the market. Pharmaceutical plants are regularly visited by inspectors to ensure that the drugs produced meet the quality standards required for sale in Canada.

When a new drug with unknown properties is to be placed on the market, the manufacturer is required by law to provide specified information, including a quantitative list of all ingredients, evidence of safety and effectiveness, the formulation of dosage forms and reports of any adverse effects. This information is studied carefully to ensure that the drug is safe and effective for the purposes claimed. Even after a new drug is on the market, its sale can be banned by the Health Protection Branch if the Drug-Adverse-Reaction Reporting Program indicates that the drug is unsafe and injurious. The Drug Quality Assessment Program aims at producing objective evidence of the quality of drugs already on the Canadian market and disseminating it to members of the health professions, governments, and the general public. Plants manufacturing biologicals such as serums and vaccines must be licensed according to specifications of the Food and Drug Act and Regulations, whether they are located in Canada or abroad.

Another major objective of the Branch is to enable the public to purchase high quality drugs at a reasonable price. This program includes integrated action involving inspection of manufacturing facilities, assessment of claims and clinical equivalency of competing brands, and providing information to professionals concerned and to the general public.

Non-medical use of drugs. The objectives of the Non-medical Use of Drugs Directorate may be described under four main headings: prevention, to develop and stimulate programs intended to prevent mind-altering drugs being used in ways that may result in physical, mental and social health problems; treatment, to stimulate the development of effective means of dealing with the immediate physical and mental problems caused by the use of mind-altering drugs; rehabilitation, to stimulate the development of effective means of restoring casualties of mind-altering drugs to health; and education, to develop and promote information and education programs aimed at preventing drug abuse and at persuading smokers to stop and young persons not to start.

Environmental health. The Environmental Health Directorate is responsible for studying the adverse effects on human health of the chemical and physical environment, and for ensuring the safety, effectiveness, and non-fraudulent nature of medical devices. The Directorate is responsible for developing health hazard assessments for the work and home environments, household products, and air and water criteria. Research on radiation hazards is conducted and environmental and occupational exposures are monitored. The Directorate is responsible for the enforcement of the Radiation Emitting Devices Act and that portion of the Food and Drugs Act dealing with medical devices and radioactive pharmaceuticals. Additionally, the Directorate jointly administers the Hazardous Products Act with the Department of Consumer and Corporate Affairs.

Disease control. The Laboratory Centre for Disease Control Directorate is involved in the development and implementation of improved laboratory diagnostic procedures and other measures to combat communicable disease agents. Activities entail developing methods for detecting and preventing disease, producing and distributing standardized diagnostic reagents to federal, provincial and other health organizations, and providing a national reference service for identification of disease-producing bacteria, viruses and parasites.

The Directorate also maintains surveillance of birth defects, poisonings, and adverse drug reactions. Epidemiological research is carried out on both communicable and non-communicable diseases. A program is also under way to assess the effect of social and environmental change on health including the calculation of risk factors due to lifestyle.

5.1.3 Research, planning, standards and consultation

Medical research. Most federal grants supporting health science research in universities and hospitals are channelled through the Medical Research Council. The work of the Council and of the Health Research and Development Program in the Department of National Health and Welfare are described in Chapter 9.

Health statistics and economics. Health statistics are collected by the Health Division, Statistics Canada, as well as by various units in the Department of National Health and Welfare, with co-ordination by an Interdepartmental Committee. Plans are under way for a jointly operated continuing Canada Health Survey including a household interview component and a medical examination component.

Statistics Canada has established collection systems for data on vital statistics, special diseases, health manpower, and hospital and institutional care. Units in the Health Protection Branch of National Health and Welfare are concerned with data on health products, health hazards, and certain disease areas. In the Health Programs Branch, the Health Economics and Statistics Division operates a medical care data bank, and integrates health statistical data from various sources. The Division undertakes socio-economic research in a variety of fields including medical and hospital care, community health, health expenditures and resources, and other matters relating to health costs and utilization. These studies support departmental health planning, as well as the production of publications designed to increase public understanding of the organization, cost and performance of Canada's health services and resources.

Health planning. The Long Range Health Planning Branch is responsible for continuously assessing the over-all orientation of health services and the organization of resources and factors influencing the health of Canadians. The Branch also collaborates with other branches of the Department in developing proposals for implementing the general program. The operating branches are responsible for the detailed development, implementation and

management of the various departmental programs. The Branch has specialists in the following disciplines: medicine, pharmacy, economics, sociology, demography, political science, statistics and administration.

Standards and consultation. The Department of National Health and Welfare extends technical advisory services to provincial agencies, universities, and other organizations for the development of health programs, health manpower, and health research. Consultative services are available through the various administrative units of the Department responsible for federal-provincial health care programs such as hospital insurance, medical care insurance, and health grants programs that have a service, demonstration, research or educational objective: the Non-medical Use of Drugs Program, the Family Planning Grant, the National Health Research and Development Program, and the program for health manpower development. Consultants are engaged in health facilities design and in most areas of community health including mental health, dental health, child and maternal health, rehabilitation, geriatrics and clinical nutrition, with a particular emphasis on health education and promotion.

Co-ordination and promotion of health standards development is now centred in the Health Standards and Consultants Directorate of the Health Programs Branch. The Health Facilities Design Division provides an information and consultation service on design and plant operation. Other technical advice is available through programs directly operated by the Department for health protection including the safety of foods, drugs, and health appliances, environmental health, the Laboratory Centre for Disease Control, and other specialized areas.

5.1.4 International health services

Through this service, Canada actively assists and co-operates with the World Health Organization (WHO), other specialized agencies of the United Nations, and units such as the United Nations Commission on Narcotic Drugs, whose programs have a substantial health component or orientation. This service also organizes the participation of health personnel in bilateral exchanges with countries having scientific, technological, and cultural agreements with Canada. Health training is provided for a number of persons coming to Canada each year under the WHO/PAHO Fellowships Program and likewise, under the same Program, travel-study grants are given to a number of Canadians in the field of public health.

Canadian experts in public health and health sciences undertook specific assignments abroad during the year in response to requests from the World Health Organization and the Pan American Health Organization.

To carry out Canada's obligations under the International Health Regulations, the Department of National Health and Welfare maintains quarantine measures for ships and aircraft entering Canadian ports and provides accommodation and medical care for persons arriving in Canada who require quarantine.

The Department is responsible for the enforcement of regulations governing the handling and shipping of shellfish under the International Shellfish Agreement between Canada and the United States. Other responsibilities include the custody and distribution of biological, vitamin, and hormone standards for WHO and certain duties in connection with the Single Convention on Narcotic Drugs, 1961.

5.1.5 Fitness and amateur sport

Canada's Fitness and Amateur Sport Program seeks to improve the fitness level of Canadians and to encourage their participation in physical recreation and amateur sport. Established in 1961 by an Act of Parliament, the program in the 1975-76 fiscal year will spend approximately \$21 million toward this objective. The program is administered by the Fitness and Amateur Sport Branch of the Department of National Health and Welfare. Within the Branch are four divisions: Sport Canada; Recreation Canada; Program Operations and Administration; Planning, Research and Evaluation. The activities of the Branch can be grouped under four broad program areas: promotion and communications, resource development, training, and competitions.

Promotion and communications. The production and distribution of brochures and films, the setting up of displays, and the staging of conferences are a regular part of the Branch's promotion and communications effort. The Sport Demonstration Tour, support for

ParticipAction, and an effort in employee-fitness programs seek to increase public awareness of the need to be fit and the enjoyment to be found in physical recreation and sports.

Resource development. The development of resources for sport and recreation, particularly human resources, is a traditional mainstay of the program. Sport Canada and Recreation Canada provide contributions to national sport and recreation associations for administration, leadership and skill development. Many administrative services are available from the National Centre for Sport and Recreation, which is supported by the program. Recreation Canada makes special contributions to the Atlantic provinces and the territories, as well as assisting Indian and Métis organizations.

Training. Game Plan, a major co-operative effort involving the federal government, the provinces, and the Canadian Olympic Association is designed to provide additional funding for the extra training and competitive experience that Canadian athletes require for international competition. Grants-in-aid for student athletes and the Canada Fitness Award are also well-known programs throughout the country which provide programs for the average participant.

Competitions. Support is available for competitions at the developmental and elite levels. This support includes payment of the travel costs of athletes, coaches and officials to national championships. A major part of the support for the Canada Games and Arctic Games comes from the Branch. Sport Canada also provides contributions for the travel costs of athletes to some major international competitions.

5.1.6 Federal-provincial co-operation

Since the federal and provincial governments share the responsibility for dealing with health matters in Canada, a formal structure has been established for federal-provincial collaboration and co-operation in the health field. The following are its elements: Conference of Ministers of Health; Conference of Deputy Ministers of Health; Federal-Provincial Advisory Committees on Community Health, Health Insurance, Health Manpower, and Health Standards; and the secretariat. The role of the four advisory committees is to facilitate the work of the ministers and deputy ministers, and to assist them in achieving their objectives, in identifying major issues, and in solving problems. They may set up groups to deal with particular subjects requiring more detailed study.

The very broad terms of reference of the Conferences of Ministers and of Deputy Ministers of Health involve all matters relating to the promotion, protection, maintenance, and restoration of the health of the people of Canada. Normally, the Conference of Ministers meets annually, and the Conference of Deputy Ministers meets twice a year. The last two ministers' conferences considered an overview of major health problems, objectives, and goals, the Nutrition Canada survey report, a proposed national health-status survey, physician supply, acupuncture policy, the proposed legislation on cannabis, the federal working document *A new perspective on the health of Canadians*, the federal-provincial financing arrangements, mental health, alcohol abuse, Indian health and family planning.

5.2 Provincial and local health services

The responsibility for regulation of health care, operation of health insurance programs and direct provision of some specialized services rests with the provincial governments; some health responsibilities are delegated to local authorities. Although each of the provinces assigns primary responsibility for health to one department the pattern of distribution of function varies from one province to another. In Alberta, Manitoba and Quebec, health and social services are combined within the same department. Other provinces maintain liaison between departments responsible for these related services.

In a number of provinces, health insurance plans and some specialized programs are administered by semi-autonomous boards or commissions. Some of these report directly to a minister of health; others are under the jurisdiction of a deputy minister. In provinces such as New Brunswick and Ontario health insurance programs are operated directly by the health departments.

In each province, both institutional and ambulatory care for tuberculosis and mental illness is provided by an agency of the department responsible for health. Increasing attention in these programs is directed to preventive services. Programs related to other particular health

problems such as cancer, alcoholism and drug addiction, venereal diseases and dental conditions have been developed by government agencies, often in co-operation with voluntary associations. A number of provincial programs have been directed to meet the needs of specific population groups such as mothers and children, the aged, the needy, and those requiring rehabilitation care.

Environmental health responsibilities, involving education, inspection, and enforcement of standards, are frequently shared by health departments and other agencies.

Public health or community health units are among the most decentralized. Some of these units have taken on responsibility for such things as local health education, school health and organized home care. Although local and regional involvement in health services has been concentrated in hospital planning and some public health aspects, several provinces have inaugurated district and regional boards which participate in the co-ordination of all health-related services in their areas.

5.2.1 Hospital and institutional care

Apart from mental hospital care which is reported separately, and care in tuberculosis sanatoria, virtually all care provided in other (general and allied special) hospitals is covered by provincial hospital insurance plans through agreements made under the provisions of the Hospital Insurance and Diagnostic Services Act, 1957. Newfoundland, Saskatchewan, Alberta and British Columbia operated hospital insurance plans prior to the proclamation of the federal Act and these provinces with Manitoba entered federal-provincial agreements on July 1, 1958, the earliest possible date under the new Act. Prince Edward Island, Nova Scotia, New Brunswick and Ontario followed in 1959, the territories in 1960, and Quebec in 1961. Effective January 1, 1965 Quebec elected to accept cost-sharing tax abatements in lieu of hospital insurance payments under the Established Programs (Interim Arrangements) Act.

Plans are administered by provincial departments of health, or social affairs in some provinces, and by separate commissions in others. In some provinces, hospital insurance and medical care insurance are combined under one administration.

Coverage is automatic or compulsory in most provinces for all residents; however, in Ontario some persons are eligible to remain outside the plan as noted below, while in Alberta a resident who elects to remain outside the medical care plan must also opt out of the hospitalization plan.

Provincial plans insure all approved available in-patient services at the standard ward level as indicated in the federal Act and agreements. In view of the federal requirement, all provinces guaranteed to provide these services upon entering into agreements and there has since been virtually no change in the range of insured in-patient services.

Out-patient services have remained an option of the province. In the initial years of operation under the Act many provincial plans provided only limited out-patient services; however, there has been a continuous improvement in coverage throughout the years and all provinces now provide a fairly comprehensive range of insured out-patient services.

All plans pay for insured in-patient services in other provinces of Canada at the rates prevailing in those provinces, but approval of the Commission is required by Nova Scotia and Prince Edward Island except for emergency care. For in-patient services outside Canada, limits on rates and the volume of services apply in most provinces. Payments for out-of-province insured out-patient services are generally limited by the rates payable within the province with restrictions on service volumes. Nova Scotia makes no payment for out-patient care outside the province.

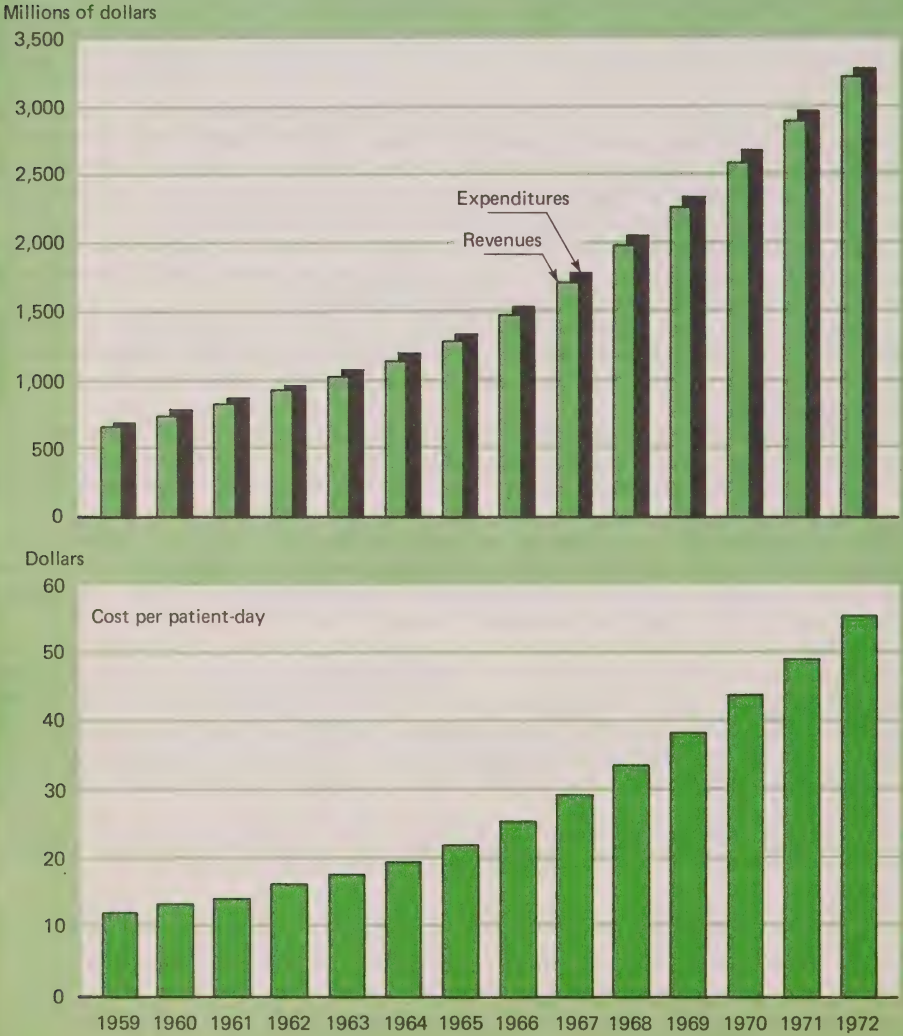
Provinces finance their portion of the cost of sharable hospital care through a variety of methods including general revenue, premiums, sales (hospital) tax, and in some instances a combination of these sources.

Ontario charges a monthly premium of \$11 for single persons and \$22 for families for both hospital and medical care. The Ontario plan requires compulsory payroll deductions in employee groups consisting of 15 or more persons. For other residents coverage is voluntary. This is the only semi-voluntary plan. In Alberta the joint premium charge for medical care and hospital insurance is \$5.75 per month for single persons and \$11.50 for families. Premium assistance is available in both Ontario and Alberta for certain residents with limited incomes, and premium exemption is provided for residents over 65 years of age.

Alberta, British Columbia and the Northwest Territories levy authorized charges directly to patients for insured services. In Alberta in-patients of general hospitals, other than newborn infants, are charged \$5 for the first day of care, while patients receiving auxiliary (chronic) hospital care are charged \$3 a day commencing with the 121st day of care. In British Columbia, in-patients pay \$1 a day and in the Northwest Territories \$1.50. In British Columbia there is also a charge of \$1 or \$2 for specified out-patient services.

In addition to emergency services for out-patients, most hospitals provide some ambulatory care, normally including radiology, laboratory and other diagnostic services. In larger hospitals, special ambulatory care units may be established for a wide range of conditions. Certain hospitals provide day and/or night care programs and hospital-based home

Revenues and expenditures of public hospitals¹
and cost per patient-day, 1959-72



1. General, allied special, mental and tuberculosis.

care programs. In provinces where provincially operated ambulance services are not available, ambulance services may be hospital based.

Non-hospital institutional care is provided by a variety of facilities including nursing homes, homes for the aged, homes for unmarried mothers, child care institutions, hostels and senior citizens' lodges. Insurance coverage does not extend to these institutions except in the three provinces noted below, but persons requiring care are eligible to apply for assistance through the Canada Assistance Plan.

Ontario provides extended health (nursing home) care benefits under its health insurance plan. Manitoba has a personal care home program covering extended treatment, personal care and hostel care, and Alberta has an insured nursing home program. Daily authorized charges to the patient applicable to these programs are: Ontario \$5.45, Manitoba \$4.50, Alberta \$3.00.

In addition, some provincial insurance plans provide other services not eligible for cost-sharing under the federal Act including home renal dialysis and home hyperalimentation equipment, supplies and medication, essential ambulance services at modest cost, and occupational and speech therapy in non-hospital facilities in Ontario; physiotherapy services in non-hospital facilities and services in community health and social centres in Saskatchewan; care in senior citizens' lodges at modest cost in Alberta; and equipment, supplies and medication for home renal dialysis in British Columbia.

5.2.2 Medical care and related services

Before the establishment of government-administered medical insurance, voluntary prepayment arrangements to cover the cost of physicians' services had developed in both public and private sectors. By the end of 1968, basic medical or surgical coverage, or both, were being provided to about 17.2 million Canadians, 82% of the population. Voluntary plans operating in the private sector covered about 10.9 million, or 52%, and public plans of various kinds covered 6.3 million, or 30%. By early 1972 all 10 provinces and the two territories had met the criteria stipulated under the Medical Care Act as conditions for federal cost-sharing, and virtually the entire eligible population was insured for all required medical services plus a limited range of oral surgery. Members of the Canadian Armed Forces, the Royal Canadian Mounted Police, and inmates of federal penitentiaries whose medical care requirements are met under alternative provisions are excluded. Services by physicians that are not medically required (e.g. examinations for life insurance), services covered under other legislation (e.g. immunizations where available through organized public health services), and services to treat work-related conditions already covered by workmen's compensation legislation are not covered.

The federal government contributes, over-all, half of the cost of insured services. The proportion varies somewhat from province to province, depending upon actual provincial cost levels. In 1973-74 the proportions ranged from 44.3% in British Columbia and 44.6% in Ontario to 74.3% in Prince Edward Island and 81.5% in Newfoundland.

Seven of the 12 provincial (or territorial) medical plans finance their share of the cost from general revenues only and in those plans there is virtually no direct cost to families, apart from additional billing that doctors may impose. Three provinces and the Yukon Territory levy premiums to help finance their share, and one employs a payroll tax. In their plans, premiums are paid by the government for welfare recipients and, in some cases, for residents 65 years and over, and various devices are used to keep the financial burden low for families who are poor but are just above the poverty line and so are not entitled to welfare assistance.

Each plan is described briefly in the paragraphs that follow, in order of its entry into the national program. Although most doctors are paid on a fee-for-service basis, alternative or additional arrangements include salary, sessional payments, contract service, capitation, and incentive pay. It should be noted that all provinces permit specialists to extra-bill for non-referred care if the specialist rate is higher than the rate the plan will pay for such service.

Saskatchewan. The Saskatchewan program, introduced in July 1962, requires enrolment of the entire eligible population. Since January 1, 1974, when premiums were discontinued, the provincial share of the cost has been financed entirely from general revenues. The Medical Care Insurance Commission (MCIC), the principal administering agency, pays doctors for most of the services provided under the plan. About 5% of the population obtain their insured service under terms and conditions identical to those of the MCIC but by way of a separate

administering agency, the Swift Current Health Region. The provincial authority also arranges for payment for physicians' services in mental and tuberculosis institutions and for cancer control.

Benefits include home, office, and hospital visits, surgery, obstetrics, psychiatric care outside mental hospitals, anaesthesia, laboratory and radiological services, preventive medicine, refractions by optometrists, chiropractic services, and referred services by dentists for care of cleft palate and for orthodontic oral surgery. There are no waiting periods for eligibility and no exclusions for age or pre-existing conditions.

The MCIC pays for approved services by physicians on the basis of 100% of the negotiated payment schedule and in accordance with its assessment rules. The fees in this negotiated schedule are about 85% of those in the provincial medical association's own current fee schedule, which is used primarily for billing visitors and other non-insured patients. Participating chiropractors are paid under a formula combining contracted payments for radiography plus fee-for-service payments for visits, the payments being progressively discounted as volume per chiropractor increases. Optometrists are paid \$11.50 per refraction.

A physician may choose among five ways to receive payment. First, the physician may receive payment directly from the MCIC at 100% of the negotiated schedule, and accept this as payment in full. Second, patient and physician may enrol voluntarily with an "approved health agency" that serves as intermediary, with respect to payment, between the public authority and the physician; here also, the physician receives the negotiated tariff. Third, a physician may be paid through clinics financed by per capita contributions from the provincial authority. Fourth, a physician may submit his account directly to the patient, who pays him either before or after seeking reimbursement from the public authority; the physician may bill the patient directly for an amount over and above what the public authority has paid. Fifth, physicians and patients may if they choose make private financing arrangements. No physician is compelled to confine himself to one or another mode of payment.

British Columbia became a participant under the federal Medical Care Act on July 1, 1968. The plan is governed by a public commission, originally with jurisdiction over "licensed carriers", which are non-profit agencies charged with responsibility for day-to-day management of the separate components of the program. These carriers are being phased out in favour of centralized administration. In addition to physicians' services and a limited range of in-hospital oral surgery, the benefits include refractions by optometrists, some orthoptic services, limited physiotherapy, special nursing, chiropractic, naturopathy, and orthodontic services for cleft palate and harelip.

Participation in the program is voluntary. Premiums are \$5 a month for a single person, \$10 a month for a two-person family, and \$12.50 a month for a family of three or more persons. For eligible residents (they must have resided in the province the preceding 12 consecutive months), the government offers subsidies totalling 90% of the premium for persons with no taxable income and 50% of the premium for persons with taxable income from \$1 to \$1,000.

The arrangements for payment to physicians are similar to those in Saskatchewan, except that the plan's payment-schedule is about 100% of the fee-schedule of the provincial medical association. A physician either bills the patient for services rendered, or accepts payment directly from the public authority. In the former case, the physician must notify the patient in writing, before rendering a service, that he is a non-participating physician and the patient must agree in writing that he is prepared to pay more than the amount of reimbursement that he may receive from the public authority. In the latter case, the physician may also charge a fee in excess of the tariff, provided the patient has been duly notified and agrees in writing to the extra charge, and provided the amount of the extra charge is made known to the public authority.

Newfoundland became a participant on April 1, 1969. The plan covers all required medical services by doctors and a limited range of in-hospital oral surgery. Refractions by optometrists are not covered. All eligible residents are covered and there are no premiums, the provincial portion of costs for insured services being met from general revenues.

Payments by the plan are limited to 90% of the physicians' fee-schedule. A physician must formally select, and use exclusively, one of the modes of payment available. A

participating physician must accept the plan payment as payment in full. A non-participating physician may impose additional charges, provided that he informs the beneficiary that he is not a participating physician and that he reserves the right to charge in excess of the amount payable by the plan.

For several years, many doctors in Newfoundland have contracted with the provincial government and with certain voluntary agencies to receive salaries for providing medical service in outlying areas. These arrangements were continued after 1969.

Nova Scotia became a participating province on April 1, 1969. All eligible residents are covered. Registration is required but there are no premiums, the entire provincial share of the cost being obtained from general revenues. The insured services include all necessary medical procedures, plus a limited range of oral-surgery procedures in hospitals. Refractions by optometrists are also covered.

Benefit payments by the plan are made at 85% of the physicians' fee-schedule. Physicians must choose either to participate, accepting all payments directly from the plan, or not to participate. In either case, physicians may extra-bill, but they must obtain written consent from the patient before rendering the service, and the amount of the extra charge has to be made known to the Commission.

The Nova Scotia plan is administered by a non-profit carrier designated by the public authority as its sole agent with respect to fee-for-service accounts. This agency carries out all functions relating to eligibility-checking and the processing and payment of claims, subject to review and audit by the public authority.

Manitoba began participating under the federal Medical Care Act on April 1, 1969. Registration is compulsory for all eligible residents. Premiums were discontinued as of July 1, 1973, and the provincial share of the cost is now financed entirely from general revenues. The insured benefits cover all medically-required services provided by medical practitioners and limited in-hospital dental surgery. Also included, with limitations, are refractions by optometrists and the services of chiropractors.

Physicians may choose to participate in the plan, and to accept all payments from public authority, or they may elect to receive payments direct from all their patients. In the former case, the amount received (85% of the physicians' fee-schedule) must be accepted as payment in full. A non-participating physician must give a patient reasonable notice if he intends to extra-bill. Payment is also made for prosthetic devices and certain limb and spinal orthotic devices and services that are medically required, contact lenses following surgery for congenital cataract, and artificial eyes.

Alberta became a participating province under the federal Medical Care Act on July 1, 1969, with administration by a Health Care Insurance Commission. A combined annual premium of \$69 for single persons and \$138 for families covers both medical and hospital insurance. Subsidies reduce the premiums to \$24 for single persons and to \$48 for families with no taxable income in the previous year; to \$36 for single persons whose taxable income does not exceed \$500; and to \$72 for families whose combined taxable income does not exceed \$1,000. Premium payments are waived if either the head of the household or that person's spouse is 65 years of age or over.

Registration and the payment of applicable premiums are compulsory. Failure to comply makes residents liable to a waiting period of three months following registration before becoming eligible for insured services.

In addition to the benefits of physicians' services and a limited range of oral surgery, the costs of which are shared with the federal government, the Alberta program includes refractions by optometrists, services and appliances provided by a podiatrist, a limited range of osteopathic services, certain additional dental services and chiropractic services.

Residents objecting in principle to claiming benefits under the combined hospital and medical program can choose to remain outside the program (i.e. to opt out) and not be liable for premium payment. They are at liberty to obtain private insurance coverage for hospital and related care, but interpretations under the federal Medical Care Act prevent private carriers from offering insurance for physicians' services.

The plan also offers subscribers the option of purchasing insurance for additional health services (again, with subsidy provisions) from the voluntary Alberta Blue Cross agency. The

optional membership offers coverage for hospital-differential charges for semi-private and private-ward care, ambulance services, drugs, appliances, home-nursing care, naturopathic services, clinical psychological services, and dental care needed because of accidental injury.

Payments to physicians are made at 100% of the fee-schedule of the provincial medical association. Doctors may elect to bill patients for fees beyond those paid by the plan. In such cases, doctors are required to notify patients beforehand, and must indicate to patients the total amount and also the amount that will be paid by the plan.

Ontario began participating on October 1, 1969. Enrolment is compulsory for employee groups of 15 or more persons and provision is made for the creation of compulsory groups in the case of five to 14 employees. The insured benefits cover all required services of medical practitioners and, in specified hospital settings, of oral surgeons, refractions by optometrists, a portion of out-of-hospital physiotherapy cost, ambulance cost, and, with limitations, certain paramedical services offered by chiropractors, osteopaths, and podiatrists.

Doctors may choose from two modes of receiving payment for insured services. Those billing directly to the medical plan are paid directly by the plan at 90% of the negotiated fee of the provincial medical association for the service rendered, and cannot bill the patient for the balance. Doctors electing to bill patients directly cannot be paid by the plan. Patients must pay the doctor the amount billed and can recover from the plan 90% of the fee for the service rendered.

The levy for the combined hospital-medical premium is \$132 a year for single persons and \$264 for couples and families. Premiums are waived for welfare recipients and for all residents 65 years of age or over. Premium-subsidy assistance was extended on April 1, 1972, to cover hospital insurance as well as medical insurance. Single persons and families with no taxable income in the current year are eligible for 100% assistance in premium payment and for 50% assistance if single with taxable income under \$1,000, or if a couple or family with taxable income under \$2,000.

Quebec entered the national program on November 1, 1970. Registration of all eligible residents is compulsory and, as with other plans, the benefits include all required medical services of physicians, refractions by optometrists, and a limited range of dental services. The medical services, provided mostly by doctors engaged in private fee practice, are paid for on the basis of claims submitted.

Doctors who participate receive their entire remuneration, directly or indirectly, from the provincial agency, the Quebec Health Insurance Board, in accordance with a negotiated schedule of benefit payments for each service provided, and they cannot extra-bill. They may choose to be paid directly by the Board, or indirectly by the patient, who is in turn reimbursed by the Board.

Doctors who choose not to participate must collect all fees (except for emergency care) from the patient, who cannot, unlike in other provinces, seek reimbursement from the provincial agency. He must pay the entire amount himself.

Part of the provincial share of costs is financed by a tax on wage and salary earnings. Each taxpayer whose net income in a year equals or exceeds \$5,200 if married, or \$2,600 if single, contributes 0.8% of such income, up to a maximum contribution of \$125 for employees who get at least three quarters of their income from wages and salaries and \$200 for others. Employers also contribute 0.8% of their entire payroll. Persons who have earnings below the income thresholds and all welfare recipients are covered without payment of the tax on earnings.

Prince Edward Island began participating on December 1, 1970. Benefits are comparable to those in other provinces. Registration is required but is not a condition of eligibility. The provincial share of costs is met from general revenue. A doctor who decides to collect directly from his patient can extra-bill, but only up to the amount listed for the service in the medical association fee-schedule and only after obtaining the patient's written consent and notifying the provincial agency of the amount. A doctor who bills the provincial agency directly is paid by the agency at 92% of the fee-schedule. He must accept this payment as payment in full unless he has obtained the patient's written consent.

New Brunswick began participating on January 1, 1971. Registration by the family head is required, although it is not an eligibility requirement. Doctors must indicate whether or not

they intend to participate in the plan; if they so decide, they are obliged to accept 90% of their fee-schedule as payment in full. Those doctors who elect to deal directly with particular patients may extra-bill beyond amounts indicated at the 90% rate.

The New Brunswick plan, like others, is generally comprehensive, including limited oral surgery in hospital.

The Northwest Territories entered the national program on April 1, 1971. Doctors who elect to submit accounts to the territorial insurance agency must accept as payment in full from the agency the amounts set forth in its benefit schedule. Those who choose to collect directly from patients must, initially, give notice to the agency that they are not participating, and must inform the patients beforehand of their intention. Refractions by optometrists are not covered. The territorial share of costs is met entirely from general revenues.

Because of isolated conditions in this far northern area, it is common, as in the outport areas of Newfoundland, for many doctors to work as salaried employees of third-party institutions and agencies.

The Yukon Territory entered the program on April 1, 1972. Its plan employs premium levies to finance its share of total costs. Registration is required, but coverage for insured services is not contingent on premium payment. Premiums are \$78 a year for single persons, \$150 for couples, and \$174 for families of three or more. Employers are required to deduct the premiums from the wages or salaries of employees and remit the amounts deducted to the plan. Sharing of the cost of premiums under collective-bargaining agreements is permissible.

Premium assistance is available for low-income families. Individuals and families with no taxable income in the previous year are eligible to have the entire premium paid on their behalf. Half the premium is paid for single persons with taxable income of \$500 or less, for couples with combined taxable income of \$1,000 or less, and for families of three or more with combined taxable income of \$1,300 or less. The federal government assumes responsibility for premium payments on behalf of native peoples, for whom it accepts general responsibility.

Claims for payment may be made by a doctor either to the plan directly or to the patient. When a patient is billed directly by a doctor, he must be supplied with an itemized account that can be used when seeking reimbursement from the plan. A doctor who elects to bill his patients can make any mutually satisfactory arrangement for remuneration, providing this is done prior to rendering service; otherwise he must accept what the plan pays as payment in full.

5.2.3 Special programs

All provinces have provisions to pay all or part of the cost of additional services required by residents in financial need under their social assistance programs, such as welfare recipients, the elderly and other age-specific groups. These costs are shared 50-50 by the federal government under the Canada Assistance Plan Act. The range of benefits varies from province to province, but may include such services as eyeglasses, prosthetic appliances, dental services, prescribed drugs, home care services, and nursing home care.

Physicians' services. The provincial medical care insurance plans cover provincial welfare recipients, without premium payment. The rates of payment to their physicians are identical to those that apply to the general population. Benefits, usually a little broader, also include such otherwise-uninsured items as travelling allowance and telephoned advice, the cost of these additional items being generally shared under the Canada Assistance Plan. Extra-billing by physicians is usually waived.

In Alberta and Ontario payment of premiums is not required of persons 65 years of age and over, their spouses, or their dependent children.

Hospital care. Every provincial hospital care insurance program covers welfare-allowance recipients without their payment of premiums or authorized charges.

Prescribed-drug benefits. In British Columbia, Alberta, Saskatchewan, Manitoba, New Brunswick, Quebec and Newfoundland, virtually all provincial public-assistance recipients are included in programs that provide prescribed drugs. The drug benefits in most provinces include practically every prescription drug and some unprescribed medications. Rates of payment to pharmacies and dispensing physicians are negotiated by provincial governments.

In Saskatchewan and New Brunswick, certain beneficiaries may be obliged to pay a portion of the cost.

The governments of Ontario and Nova Scotia subsidize recipients of local welfare allowances who purchase drugs provided under municipal programs, and pay the full cost of drugs in certain cases of special need. Ontario also provides patients of nursing homes and persons receiving assistance under the government's province-wide family benefits program with free prescription drugs from a formulary of 1,200 items.

In 1973 and 1974 many provinces were broadening pharmaceutical benefit coverage to include the aged, often without tests of need or income. Costs in such instances would not necessarily be sharable with the federal government under the Canada Assistance Plan.

Nova Scotia began a program on October 1, 1974 to provide prescription drugs without charge for all residents aged 65 years or over.

Quebec's program, begun in 1972 for social assistance recipients, was extended on January 1, 1974 to include Old Age Security pensioners whose financial need entitled them to the maximum Guaranteed Monthly Income Supplement. Coverage was further extended on January 1, 1975 to all recipients of the Supplement.

Ontario's program for the needy has, since September 1, 1974 included those persons aged 65 and over whose financial status entitles them to the Monthly Income Supplement. In the Budget Address of April 7, 1975, Ontario announced that as of August 1, 1975, this program was to be broadened to include all persons 65 and over.

Manitoba began a program on May 25, 1973, which reduced the cost of prescription drugs for all Old Age Security pensioners. The beneficiary paid the first \$50 of the drug costs in a year for each member of his family and 20% of the rest. Beginning January 1, 1975, the program was extended to the entire population and the \$50 deductible was applied only once to each family instead of to each person.

Since July 1, 1974, the voluntary Alberta Blue Cross organization has administered a plan that provides prescription drugs to all residents aged 65 or over and all recipients of War Veterans Allowances. The recipient pays 20% of the cost of each prescription. (The benefits of this program also include eyeglasses, hearing aids, dental care, and certain appliances, all subject to limitations of volume and cost.) Persons under 65 years have the option of enrolling with an added premium; they are charged a deductible of \$15 a year for drugs.

British Columbia since January 1, 1974, provides free prescribed drugs, including prescribed "over-the-counter" medications, to all persons aged 65 or over who have resided in the province for 90 days.

Most provinces also supply, through health department auspices, certain drugs that are important in the treatment of diseases, such as venereal disease, rheumatic fever, tuberculosis, or cystic fibrosis, where therapy costs can be very high.

Still other additional benefits are made available in some provinces to patients with specific conditions, costs of treatment for which can be catastrophic for individual families. As an example, in Saskatchewan provision was made in 1973 for full payment of the cost of prescribed drugs, up to a limit of \$1,000 a year per patient, required by any resident with chronic end-stage kidney disease who is receiving kidney dialysis or transplant.

Dental care benefits. Dental benefit plans are operated for selected recipients of welfare in most provinces. In British Columbia, public-assistance recipients can qualify through special means tests for enrolment. A separate program is operated in that province for the children, under 13 years of age, of all welfare recipients. The Ontario program provides dental benefits to persons in receipt of mothers' allowances and dependent fathers' allowances and their children under the age of 18; provincial assistance is also available for essential dental services for others, at municipal discretion. All provincial public-assistance recipients qualify for dental benefits under schemes operated in Alberta and Saskatchewan, and for selected categories of recipients in Manitoba.

Benefits under these dental plans typically exclude certain specified services and require prior authorization for some services. In the three most western provinces, posterior bridgework, prophylaxis, and paedodontics are excluded. Prior authorization is required in British Columbia and Saskatchewan for dentures, relines, gold inlays, orthodontia, and periodontia. Payments to dentists are at negotiated fixed rates under each of these plans.

Provision of dentures is subject to a co-charge of approximately 50% in Alberta and Saskatchewan.

A limited range of in-hospital dental surgery performed by physicians and dentists is a benefit under federal-provincial medical insurance plans. The range is extended somewhat in a few provinces; the costs of these added benefits are not shared by the federal government in the medicare plan, nor under the Canada Assistance Plan unless the beneficiaries qualify on the basis of financial need.

Several provinces began, or expanded, dental care programs covering all children in specified ages. In 1974 Saskatchewan introduced a province-wide program, centred on school clinics, that makes use of dental therapists, and dentists on referral, to provide all needed care to six-year-old children in that year. Ages will be added each year until all children from three to 12 years are covered. The Quebec program pays for dental care for children under 10 years, provided a fee-for-service basis mainly in dentists' offices. Manitoba is developing a program for children, to be administered by the existing health insurance agency. Newfoundland, Nova Scotia, Prince Edward Island and New Brunswick are endeavouring to develop preventive programs for children. Some clinics were in operation in 1974.

Optical care benefits. Health benefit schemes for welfare recipients included certain optical care services and eyeglasses in the four western provinces. With the nation-wide implementation of public medical care insurance programs, refractions performed by physicians became general benefits under most schemes, and in a number of provinces refractions by optometrists as well. The cost of the optometric benefit is shared when the beneficiary is eligible under the Canada Assistance Plan. Frames, lenses and fittings continue to be benefits of the provincial health benefit schemes in the western provinces. Certain restrictions typically govern the amount that will be paid for frames.

5.2.4 Mental health and illness

Among provincially operated health services, mental health activities represent one of the largest administrative areas in expenditure and employees. In 1972, mental institutions cost \$470 million, while their personnel numbered 51,000.

No adequate measure of mental disorders exists, but during 1974 the number of in-patients under care was 56,000; there were approximately 126,000 admissions to mental institutions, and (in 1972) approximately 246,000 patients were treated in mental health clinics and psychiatric out-patient departments. Beyond these hospitals and clinics, however, are many other cases.

At the end of 1974, 211 separate in-patient facilities and 125 psychiatric units in hospitals were caring for the mentally ill; most separate facilities are operated by the provinces. The majority of hospitalized patients reside in the 43 public mental hospitals. Most mental hospitals have undergone successive additions to their original structures and many have pioneered new treatments for mental illness. Several provinces are arranging for boarding-home care with the federal government sharing the cost of maintaining needy patients in such homes under the Canada Assistance Plan. In every province at least 85% (nationally, 95%) of the revenue of reporting mental institutions in 1972 was provided by the provincial government or the provincial insurance plan.

Community mental health facilities are being extended beyond mental institutions to provide greater continuity of care, deal with incipient breakdown, and rehabilitate patients in the community. Psychiatric units in general hospitals contribute by integrating psychiatry with other medical care and making it available to patients in their own community. In 1974, the 125 psychiatric units, which had 4,136 patients as the year closed, admitted 46% of the total admissions to all kinds of mental institutions. In-patient services in psychiatric units are benefits under all provincial hospital insurance plans. Some provinces have small regional psychiatric hospitals to facilitate patient access to treatment and the complete integration of medical services. Day-care centres, allowing patients to be in hospital during the day and at home at night, have been organized across the country. Community mental health clinics, some provincially operated, others municipally, and psychiatric out-patient services have been developed in all provinces.

Specialized rehabilitation services assist former patients to function more adequately and are operated by mental hospitals and community agencies. They include sheltered workshops

that pay for work and provide training, and halfway houses in which patients can live and continue to receive treatment while becoming settled in a job.

Facilities for mentally retarded persons include day training schools or classes, summer camps and sheltered workshops as well as residential care in institutions. These facilities provide for social, academic, and vocational training. Manual skills are taught in the training-school workshops and some people are placed in jobs in the community.

Emotionally disturbed children presenting personality or behaviour disorders are treated at hospital units, community clinics, child guidance clinics, and other out-patient facilities.

Alcoholism is a disease afflicting at least 2% of adult Canadians. It is treated in hospitals, out-patient clinics, hostels, long-term residences or farms, and special facilities for the alcoholic offender. Official and voluntary agencies carry out public education, treatment, rehabilitation and research. Among these agencies are Alcoholics Anonymous, the Alcoholism and Drug Addiction Research Foundation of Ontario, the Alcoholism Foundation of British Columbia, l'Office de la Prévention et du Traitement de l'Alcoolisme et des autres Toxicomanies in Quebec, the Alcoholism Foundation of Manitoba and the Nova Scotia Alcoholism Research Foundation. Community treatment programs for narcotic addicts have been established under the aegis of the Narcotic Addiction Foundation of British Columbia and the Ontario Alcoholism and Drug Addiction Research Foundation, supported primarily by provincial funds.

5.2.5 Specific diseases or disabilities

Heart disease. The death toll from heart disease in Canada in 1973 was 56,656, amounting to 256 deaths for each 100,000 persons. The male rate was higher than the female (305 against 207). Among men aged 45 to 64 years heart disease accounted for 40% of all deaths, and the single diagnostic class Ischemic Heart Disease (in which the heart muscle has its own blood supply restricted) killed 9,265 of the 25,115 men in this age group who died in 1973. In 1972, heart disease required 4,019,000 days of hospital care in general and allied special hospitals.

The Canadian Heart Foundation, inaugurated in 1955, had by early 1974 devoted \$35.3 million to cardiovascular research in the universities and hospitals of Canada; its 1973-74 budget alone provided \$4.8 million. The Medical Research Council spent \$3.5 million on cardiovascular research in 1973-74.

Cancer. As the second leading cause of death in Canada, cancer accounts for about one of every five deaths, most of them occurring in the middle and later years of life. The death rate from cancer increased slightly, from 147.9 per 100,000 population in 1972 to 149.7 in 1973. That for females rose from 131.8 in 1972 to 132.8 in 1973, and for males from 163.9 in 1972 to 166.5 in 1973. Statistics on the incidence of new cancer cases will be found in Table 5.15.

Special provincial agencies for cancer control, usually in the health department or a separate cancer institute, carry out cancer detection and treatment, public education, professional training, and research in co-operation with local public health services, physicians and the voluntary Canadian Cancer Society branches. Although the provisions are not uniform, cancer programs in all provinces provide a range of free diagnostic and treatment services to both out-patients and in-patients. Hospital insurance benefits for cancer patients include diagnostic radiology, laboratory tests and radiotherapy. The cancer control programs in Saskatchewan and New Brunswick also pay for medical and surgical services; in most provinces these costs are covered under the public medical care insurance schemes.

Tuberculosis and respiratory diseases. Tuberculosis statistics reported by Statistics Canada for 1973 show reductions, in most cases, from the 1972 figures; new active cases totalled 3,563, or 16.1 per 100,000 population, and reactivated cases numbered 567, or 2.6 per 100,000. There were 408 deaths from tuberculosis or 1.8 per 100,000, compared with 453 deaths in 1972. Altogether, Canadians reported to be under treatment for tuberculosis in 1973 numbered 8,543 while an additional 16,222 susceptible persons (26% more than in 1972) received prophylactic drugs as a preventive measure. Further details on the incidence of tuberculosis will be found in Section 5.4.4 and Table 5.16.

Provincial health departments, assisted by voluntary agencies, conduct anti-tuberculosis case-finding programs through community tuberculin-testing and X-ray surveys with special

attention to high-risk groups, routine hospital admission X-rays and follow-up of arrested cases. However, practising physicians detect the greatest number of new cases.

BCG vaccine, estimated to be effective for 80% of those vaccinated, is used in most provinces to protect high-risk groups. Quebec and Newfoundland routinely immunize children and in the Yukon Territory, BCG is routinely administered to all newborn. Treatment, including hospital care, drugs and rehabilitation services, is free in all provinces. Chemotherapy has shortened hospital stay and facilitated out-patient or domiciliary care.

Venereal diseases. Public health authorities estimate that the real incidence of venereal diseases may be three to four times the number of cases actually reported. The 1973 figure of 3,766 cases of syphilis or 17.0 per 100,000 population was substantially above the 1972 figure of 3,064, which was 14.0 per 100,000 population. The total figure for gonorrhea cases in 1973 was 45,329 or 205.2 per 100,000, a marked increase over the 189.9 rate for 1972. Factors affecting this rise in incidence can be attributed to a supposed increase in sexual permissiveness, promiscuity and homosexuality, availability of the contraceptive pill, increased population mobility, change in social values, lack of case-reporting, and ignorance about venereal disease.

Provincial health departments have expanded public venereal disease clinics, which provide free diagnostic and treatment services at convenient hours. In some areas these departments pay private physicians to give free treatment to indigents. In addition, the provinces supply free drugs to physicians for treating private cases. Local departments of health or district health units carry out case-finding, follow-up of contacts, and health education programs, assisted by provincial directors of venereal disease control.

Other diseases or disabilities. Many services for persons with chronic disabilities, such as heart disease, arthritis, diabetes, visual and auditory impairments, and for paraplegics, have been initiated by voluntary agencies assisted by federal and provincial funds. Today, treatment for specific conditions is available at hospital out-patient clinics and in-patient or day centres, at separate clinics and rehabilitation centres, and under home care programs.

Most large general hospitals conduct out-patient clinics for various diseases and disabilities including arthritis and rheumatism, diabetes, glaucoma, speech and hearing defects, heart diseases, and orthopedic and neurological conditions.

Rehabilitation and home care. Rehabilitation services are provided by a wide range of public and voluntary agencies. Federal responsibility includes care of disabled veterans and handicapped native peoples. The Prosthetic Services Directorate of the Department of National Health and Welfare manufactures a number of prosthetic and orthotic appliances and provides fitting services in some larger cities. Physical medicine and rehabilitation services are based in several types of institution, including hospitals, separate in-patient facilities, workmen's compensation board centres, and out-patient centres for children. Financing is from various federal, provincial, and voluntary agency sources. Every province includes some institution-based services under hospital and medical care insurance. Two provinces have recently extended this coverage to include the supply and fitting of certain prosthetic and orthotic devices. Vocational rehabilitation for the disabled is also a joint federal-provincial activity.

Home care in Canada has developed in a variety of ways. Provincial home care programs characterize the numerous approaches and organizational structures that exist in Canada today. Some programs are oriented to specific disease categories; some are attached to specific hospitals or community centres, while others are seen as integral parts of comprehensive health-care-delivery-systems. The range of services delivered by the home care programs varies from nursing services alone to a complete array of health and social services. Some programs concentrate on patients requiring short-term active treatment, while others treat convalescent or chronic patients. Some have as specific objectives the reduction of institutional costs and length of stay, and others aim for continuity of care and provision of co-ordinated health care services to patients for whom home care is the most appropriate level of care.

Most home care programs are characterized by two features: centralization of control of the services within the program, and co-ordination of services to meet the changing needs of the patient. In some provinces, the departments of health play an active role in the financing and administration of home care programs, while in other provinces, local agencies, municipalities, and hospitals assume major responsibility for home care.

Special schools or classes for various groups of handicapped children are usually operated by school boards whereas most of the schools for the deaf and for the blind are residential schools operated by provincial governments.

5.2.6 Public health

Provincial and local structure. Provincial health departments, in co-operation with the regional and local health authorities, administer such services as environmental sanitation, communicable disease control, maternal and child health, school health, nutrition, dental health, occupational health, public health laboratories and vital statistics. Most provinces have delegated certain health responsibilities to health units in rural regions and to municipal health departments in urban centres. Several provinces also provide services directly to their thinly populated northern parts. Certain regulatory and preventive services, including case-finding, screening, diagnosis and referral, health education, personal health care, and supervision in certain areas of treatment services conducted through clinics and home visits, have continued to be the responsibility of local health authorities.

As metropolitan areas and population densities have increased, effective administration has required a broader geographical base. Some smaller local health services are provided or supervised by a regional health unit, or a regional structure intermediate between provincial departments and local health units provides technical advice. Some urban boards of health in metropolitan areas have been amalgamated to increase their effectiveness.

Maternal and child health. Public health nurses employed by local health services carry out programs of preventive health care to mothers, the newborn, and children through clinics, home and hospital visits, and school health services. All provincial health departments have established maternal and child health consultant services to co-operate with the public health nursing services. The maternal and child health services also undertake studies in maternal and child care, including hospital care, and assist in the training of nursing personnel.

Nutrition and health education. Provincial health departments and some municipal or regional health departments employ consultants in nutrition to extend technical guidance and education to health and welfare agencies, nursing homes and other care institutions and hospitals. They also provide diet counselling to selected patient groups such as diabetics, and conduct nutritional surveys and other research. Most provincial health departments have a division or unit of health education under a full-time professional health educator to promote public knowledge of health needs and measures. These divisions provide educational materials to other divisions of the health department, local health authorities, schools, voluntary associations, and the public. Many educational activities are directed to accident prevention and to changing habits harmful to health, such as cigarette smoking and the excessive use of alcohol and other drugs. All health workers carry out health education as part of their normal activities.

Dental health. Public dental health programs at the provincial level have been largely preventive, but increasing emphasis is now being given to dental care. Dental clinics conducted by local health services are generally restricted to pre-school and younger school-age groups. A number of provinces send dental teams to remote areas lacking such services, while the four western provinces have dental care schemes of varying coverage for welfare recipients. Other dental health programs are directed to the training of dentists and dental hygienists, conducting dental surveys, and the extension of water fluoridation.

Communicable disease control. The larger provincial health departments have separate divisions of communicable disease control headed by full-time epidemiologists; in others this function is combined with one or more community health services. Local health authorities organize public clinics for immunization against diphtheria, tetanus, poliomyelitis, whooping cough, smallpox and measles. They also engage in case-finding and diagnostic services in co-operation with public health laboratories and private physicians. Special services for tuberculosis and venereal disease have already been described.

Public health laboratories. All provinces maintain a central public health laboratory and most have branch laboratories to assist local health agencies and the medical profession in the

protection of community health and the control of infectious diseases. Public health bacteriology (testing of milk, water and food), diagnostic bacteriology, and pathology are the principal functions of the laboratory service, with medical testing for physicians and hospitals steadily increasing in volume.

Occupational health. Services designed to prevent accidents and occupational diseases and to maintain the health of employees are the common concern of provincial health departments, labour departments, workmen's compensation boards and industrial management. Provincial agencies regulate working conditions and offer consultant and educational services to industry. All provinces have legislation setting standards for health safety and accident prevention on the job. Most provinces maintain environmental health laboratories that study industrial health problems such as the effects of noise and air conditions on workers.

5.2.7 Emergency health services

The Emergency Health Services Division, established in 1959 within the federal Department of National Health and Welfare, encourages the provinces, with the support of an advisory committee, to develop their own emergency health services divisions. These are organized under a provincial director who is generally assisted by a health supplies officer and a nursing consultant. Federal Emergency Health Services are represented in the provinces by the Regional Director of the Medical Services Branch.

The task of provincial emergency health services is to ensure that vital health functions are maintained during or reorganized after an emergency or disaster, to encourage and assist local planners in establishing emergency medical units, to train health professionals and the general public in emergency health procedures, and to place emergency medical units from the national stockpile at strategic locations.

5.3 Physicians

5.3.1 Number

As of December 31, 1973 there were 36,095 active civilian physicians in Canada including interns and residents (Table 5.1). Well over one third, 13,726, were located in Ontario. British Columbia and Ontario had the most favourable population-to-physician ratios at 575 and 585, respectively, compared with the national figure of 618.

Province-to-province comparisons of ratios that include all physicians are to some extent distorted because of the differing proportions of interns and residents to other physicians in each province. If the intern-resident category is excluded, the most favourable ratio, 649, was in British Columbia, compared with the national figure of 745. Ontario, at 698, was the only other province with a population-to-physician ratio below the national average.

Table 5.1 also shows trends since 1964 in numbers and ratios for all active civilian physicians combined and for physicians excluding interns and residents. In each case the figures include physicians engaged in such activities as administration, teaching and research within the medical field, as well as those in the clinical practice of medicine.

5.3.2 Earnings

The average gross professional earnings of self-employed fee-practice physicians in 1972 were \$59,325, 4.4% higher than in 1971. The average annual rate of increase over the period 1962 to 1972 was 8.5%. The highest average gross earnings in 1972 were reported in Alberta at \$63,384, followed closely by Ontario at \$62,462. New Brunswick was close to the nation-wide average at \$59,075. In the remaining provinces the average gross earnings ranged from \$58,470 in Manitoba to \$50,068 in Prince Edward Island. Generally, through the decade 1962-72, average gross earnings have been at a higher level in Newfoundland, Ontario and the western provinces than in Quebec and the Maritime provinces. But since 1971 earnings in Quebec and New Brunswick have risen swiftly to approach the national average.

The net returns to physicians, after deduction of the expenses of professional fee practice, reveal some shifting in geographic patterns compared with earlier years. Average net earnings for Canada as a whole were \$39,978 in 1972, 2.0% higher than in 1971. The highest provincial average net earnings were reported by Quebec and New Brunswick, at \$43,401 and \$43,012, followed by Ontario at \$40,968.

The unusual over-all increase which had been reported in the average professional earnings in 1971 over the previous year was primarily the result of the introduction of provincial medical care programs in Quebec and Prince Edward Island in late 1970 and New Brunswick in January 1971. The effects were magnified by the previous relatively low levels of insurance coverage in these three provinces. For these provinces combined, the rates of increase in the average gross and net professional earnings of physicians in 1971 over the previous year amounted to 37.0% and 47.6%, respectively, while the corresponding increases for the rest of the country for the same period were only 4.5% and 3.8%.

No similar disturbances were present in 1972. Several provinces increased their payment schedules during the year but only slightly, and in any event the effects were not felt over the full 12 months. Other factors, of varying impact, account for changes in earnings. Among the more important of these are changes in the total number of practising physicians relative to population. Additionally, there were changes in distribution by specialty and geographic location of physicians, changes in the composition of the population itself, and changes in demand for services by patients.

5.4 Health statistics

5.4.1 Government expenditures

In the years ended March 31, 1967-73, expenditures by all levels of government on health almost tripled, from \$1,907 million to \$5,462 million. If these figures are adjusted to take account of the growth in population, the increase in per capita expenditures from \$93 to \$222 was 139%. Government expenditures may also be measured in relation to major economic indicators; on this basis, annual government expenditures on health over the period 1967-73 rose from 4.0% to 5.8% of personal income and from 3.1% to 5.0% of gross national product. Table 5.2 gives the relevant statistics.

The federal share of health expenditures rose from 27.4% in 1967-68 to 32.8% in 1972-73 while the provincial share fell from 70.0% to 65.2% and municipal outlays varied erratically.

Compared with the previous year, health expenditures by all levels of government in 1972-73 increased by \$616 million or 13%. This may be compared to the rise of \$618 million or 15% in 1971-72 over 1970-71. Expenditures by the federal and provincial governments increased by 11.6% and 13.0%, respectively, from 1971-72 to 1972-73, principally because of constantly rising expenditures under the Hospital Insurance and Diagnostic Services Act and the Medical Care Act.

5.4.2 Hospital statistics

Canadian hospitals are categorized for statistical purposes according to type of ownership: public, proprietary or federal; and type of service: general, allied special (extended care, rehabilitation, maternity, communicable diseases, children's, orthopedic, neurological, cancer, nursing stations, outpost hospitals, etc.), mental or tuberculosis. General hospitals, which account for the largest proportion of beds, are divided into teaching (full and partial teaching) and non-teaching (with and without long-term units) types, which are further subdivided into varying bed-size groups based on rated bed capacity.

Data pertaining to the number of hospitals in operation (Table 5.3), their classification and rated bed capacity (Table 5.4) were available as at January 1, 1974 but 1972 data were the latest available for all other tables in this Section.

Table 5.3 shows that the number and bed capacity of hospitals operating in Canada have remained relatively stable in recent years. Table 5.4 gives the number and bed capacity of public, proprietary and federal hospitals operating in Canada in 1974 classified by province and by type of service. In 1974 public hospitals accounted for 93.5% of total rated bed capacity of all hospitals followed by federal hospitals (3.8%) and proprietary hospitals (2.7%). Corresponding 1973 proportions of 93.9%, 3.6%, and 2.5%, respectively, were almost identical. The proportion of rated beds in general and allied special hospitals as a group has been increasing in recent years while rated bed capacity in mental hospitals and tuberculosis sanatoria on the whole has decreased. In 1974 general hospitals accounted for 62.6% of total rated beds as compared to 58.9% in 1973 (5.6 beds per 1,000 population in 1974). Provincially, Saskatchewan had the highest ratio of general hospital beds per 1,000 population, i.e. 7.5 in 1974 and in 1973, while Quebec reported the lowest ratio with 4.6 beds per 1,000 population in

1974 and 4.7 in 1973. The rated bed capacity of mental hospitals declined from 26.6% of total rated beds in 1973 (2.6 per 1,000 population) to 22.3% in 1974 (1.9 per 1,000 population); allied special hospitals increased from 13.5% in 1973 (1.4 per 1,000 population) to 14.5% in 1974 (1.4 per 1,000 population); tuberculosis sanatoria constituted 0.6% in 1974 (0.1 per 1,000 population) declining from 1.1% in 1973 (0.1 per 1,000 population). Rated beds per 1,000 population for all hospitals as a group declined from 9.5 in 1973 to 8.8 in 1974.

Total adult and child admissions to all Canadian hospitals increased by 0.8% between 1971 and 1972 reaching in excess of 3.7 million or 171.6 patient admissions per 1,000 population. A study of Table 5.5 reveals that admissions to public general hospitals increased by 1.1% from 1971 to reach over 3.4 million in 1972; the number of patient admissions remained constant at 156.1 per 1,000 population.

Admissions to public mental hospitals, which totalled more than 55,300 in 1972, increased by 7.3% as admissions per 1,000 population increased from 2.4 to 2.5. Over the same period, admissions to public tuberculosis sanatoria dropped by 41.5% to 3,080, a decline per 1,000 population from 0.2 to 0.1. The average daily population in all Canadian hospitals decreased by 3.5%. Public general hospitals made up slightly more than one half (52.9%) of the 1972 average daily population compared with 51.9% in 1971. Public mental hospitals, the second largest group, accounted for 28.6% of the 1972 average daily population as against 29.7% in 1971.

The average length of stay of adults and children in public general hospitals decreased from 9.9 days in 1971 to 9.7 days in 1972 (Table 5.6). Average length of stay was significantly correlated to bed capacity in general hospitals, rising from 6.8 days in the 1-to-24 bed group of non-teaching general hospitals to 11.7 days in full-teaching general hospitals in the 1-499 bed group, a reflection of the fact that larger hospitals tend to provide more diversified and complex services. Provincially, average length of stay for public general hospitals as a group ranged from 8.6 days in Alberta to 10.4 days in Quebec. Within the allied special group of hospitals there was considerable variation in the average length of stay extending from 8.4 days for children's hospitals to 12.5 days for the "other" group (maternity, neurological, orthopedic, cancer hospitals, etc.) and then climbing sharply to 42.3 days for the convalescent/rehabilitation hospitals and to 225.2 days for chronic/extended care hospitals. Average length of stay for public general and allied special hospitals as a whole declined from 11.3 days in 1971 to 11.1 days in 1972.

Table 5.7 shows that there were almost 323,400 full-time employees (excluding paid medical staff in general and allied special hospitals) in the Canadian hospital industry as a whole in 1972, a decrease of 258 full-time personnel from 1971. General hospitals as a group employed 192.6 full-time personnel per 100 rated beds, not much change from the group ratio of 193.2 recorded in 1971. Provincially, this ratio varied from 142.1 in Saskatchewan to 224.0 in Newfoundland in 1972. Taken as a group, general and allied special hospitals reported a ratio of 179.3 full-time personnel per 100 rated beds in 1972 compared to 180.5 in 1971. In mental hospitals there were 86.2 full-time personnel per 100 rated beds in 1972, up from the 84.4 reported in 1971, while in tuberculosis sanatoria this ratio was 100.5 in 1972 as compared to 76.4 in 1971.

Table 5.8 displays the revenues and expenditures of operating public general hospitals for the reporting years 1971 and 1972. Revenues for these hospitals increased by 12.1% to \$2,398.0 million in 1972 and expenditures were \$2,440.2 million, representing a 10.7% increase from the comparable 1971 figure. Salaries and wages accounted for 69.8% of expenditures in 1972 while medical and surgical supplies accounted for 3.3% and drugs for 2.8%.

Table 5.9 shows that cost per patient-day was highest for children's hospitals (\$127.46) in 1972, followed by the "other" hospitals group, which includes orthopedic, maternity, neurological, cancer hospitals, etc. (\$98.85), and general hospitals (\$73.26). In the provinces, cost per patient-day in general hospitals ranged from \$48.09 in Prince Edward Island to \$92.36 in Quebec.

5.4.3 In-patients

Canadian hospital in-patient statistics for institutions exclusive of mental hospitals and tuberculosis sanatoria are available for most years from 1960 to date. Data are presented by age, sex and diagnostic classification. Similar information on patients treated in mental

hospitals and tuberculosis sanatoria were available for some time before that year. Since 1968, statistics on primary surgical operations have been presented as counts of cases separated from hospital, the length of stay attributable to these cases, and appropriate rates. The classification systems currently used are the Canadian Diagnostic List and the International Classification of Diseases, Adapted — eighth revision.

It is recognized that the value of these data is limited in estimating total morbidity since many conditions do not require hospital in-patient treatment. However, the diagnostic standards of hospital-originated records are high, and the more serious and severe cases and conditions are likely to be hospitalized.

Tables 5.10 and 5.11 give hospital separation data by groups of diagnoses. Tables 5.12 and 5.13 show statistics concerning primary operations. In 1972, 3.6 million cases were discharged or died in hospital and 1.8 million primary operations were performed; expressed as rates, these represent 16,670 separations per 100,000 population and 8,300 operations per 100,000 population. It should be noted that these statistics present a count of events, i.e. separations or operations, not persons.

5.4.4 Notifiable diseases and other health statistics

Notifiable diseases. The notifiable diseases most predominant in 1973 were venereal diseases (49,098), streptococcal sore throat and scarlet fever (15,875), infectious and serum hepatitis (7,160), and tuberculosis (3,563). Table 5.14 shows the number of notifiable diseases by province in that year.

Cancer. Statistics Canada started a national cancer incidence reporting system on January 1, 1969 in co-operation with the National Cancer Institute and the nine existing provincial tumour registries; a registry has not yet been organized in Ontario. Participating provinces send a simple notification card with basic patient and diagnostic information for each new primary site of malignant neoplasm discovered. Data provided by this system for 1972 are given in Tables 5.15 and 5.16.

Tuberculosis. There were 3,563 new active and 567 reactivated cases of tuberculosis reported in Canada in 1973 for a total of 4,130. Of 8,543 tuberculosis patients being treated at the end of 1973, 1,434 were hospital patients and 7,109 were being treated by drugs on an out-patient drug therapy regime as a safeguard against their developing active forms of the disease. Summary information appears in Table 5.17.

Therapeutic abortions. The 10 provinces and the Yukon Territory reported 43,245 therapeutic abortions performed during the 12-month period January to December 1973. This was 4,340 cases more than the 38,905 therapeutic abortions reported by the same areas during the same 12-month period of 1972. Of these 43,201 cases or 99.9% of the total reported for 1973 were residents of Canada. In terms of rate per 100 live births, the 43,201 therapeutic abortions for Canadian residents amounted to 12.6% of live births for 1973 as against the therapeutic abortion rate of 11.2 per live births for 1972.

Canadian renal failure register. In 1972 the Kidney Foundation of Canada started a national register of patients on long-term dialysis, and this was transferred to Statistics Canada the following year. Statistics were first published in January 1975 on the 999 patients on dialysis at January 1, 1973 and the 572 who started dialysis during 1973. Data on the 531 patients starting dialysis in 1973 are shown in Table 5.18. Transplant statistics have not yet been analyzed.

Mental health. A total of 126,329 admissions to and 128,651 separations from psychiatric facilities were reported in Canada in 1974. The number of year-end patients on books stood at 54,876. The ratio of admissions to year-end patients, a measure of the turnover of the in-patient population, rose from 2.12 in 1973 to 2.30 in 1974. The distribution of the psychiatric in-patient movements across the various types of psychiatric institutions is shown in Table 5.19.

5.4.5 Personnel

Hospital nursing salaries. On the whole, salaries of nurses in public general hospitals were 15.9% higher in 1974 than in 1972. For general duty registered nurses employed in public general hospitals, the average annual salary varied from \$8,843 for those classified as graduate

nurse only, to \$10,844 for those with a master's degree in nursing (Table 5.20). Among graduate nurses without additional qualifications, mean salaries varied from \$7,935 for general duty nurses (not registered) to \$12,716 for nursing directors. As a rule, general duty registered nurses without additional qualifications, employed in public convalescent/rehabilitation hospitals, earned more than their counterparts in other types of hospitals.

Registered nurses. Data on registered nurses are collected annually from the registrar of the provincial licensing/registration authorities. The nursing group makes up the largest single component of health manpower occupations, approximately 45% of the total. Other professions within the nursing group include psychiatric nurses, qualified nursing assistants and orderlies. The figures for 1973 appear in Table 5.21.

Public health nursing salaries. Salaries of public health nurses varied according to education (Table 5.22). Directors with public health certificates were highest paid, with an average salary of \$14,232, while staff nurses (registered nurses) were lowest paid, averaging \$9,161. Staff nurses (public health) with public health certificates, employed by the Department of National Defence earned more than their counterparts in other types of public health agencies.

Physiotherapists. Data on physiotherapists were collected in 1973 as part of the health manpower statistical series. The figures shown in Table 5.23 pertain to qualified physiotherapists who are members of either the Canadian Physiotherapy Association or one of the provincial associations.

Radiological technicians. Statistics on radiological technicians were collected in 1972 as part of the health manpower statistical series. Data shown in Table 5.24 pertain to radiological technicians who are members of the Canadian Society of Radiological Technicians.

Sources

5.1 - 5.3.2 Health Economics and Statistics, Health Programs Branch, Department of National Health and Welfare.

5.4.1 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

5.4.2 - 5.4.5 Health Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
--	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

5.1 Physicians and population per physician, 1964-73, and by province, 1973

Year and province or territory	Active civilian physicians		Excluding interns and residents	
	Including interns and residents ¹			
	Number	Population per physician ²	Number	Population per physician ²
1964 (Dec. 31)	24,847	785	20,418	955
1965 "	25,481	779	20,792	955
1966 "	26,528	763	21,615	936
1967 "	27,544	747	22,472	916
1968 "	28,209	740	22,969	909
1969 "	29,659	714	24,432	867
1970 "	31,166	689	25,657	837
1971 "	32,942	659	27,439	792
1972 "	34,508	637	28,610	768
1973 "	36,095	618	29,948	745
1973 (Dec. 31)				
Newfoundland	605	893	507	1,065
Prince Edward Island	105	1,105	105	1,105
Nova Scotia	1,353	599	1,009	803
New Brunswick	677	972	625	1,053
Quebec	10,150	602	7,972	767
Ontario	13,726	585	11,511	698
Manitoba	1,597	629	1,309	768
Saskatchewan	1,186	764	1,033	877
Alberta	2,526	674	2,179	781
British Columbia	4,120	575	3,648 ³	649
Yukon Territory	18	1,111	18	1,111
Northwest Territories	29	1,310	29	1,310
Province unspecified	3	..	3	..
Canada	36,095	618	29,948	745

¹Based on data in *List catalogue*, Canadian Mailings Limited, for 1964 to 1967 and data supplied by Sales Management Systems Limited, for 1968 to 1973. Estimated number of interns and residents for 1964 to 1968 (and for 1971 in the case of one province) based on Statistics Canada data as well as Sales Management Systems. The 1973 data on the number of physicians were supplemented by specific information on interns and residents from 6 of the provinces.

²Based on Statistics Canada estimates of the population as at Jan. 1 of the following year.

³Based on data supplied by Sales Management Systems. According to data provided by the province, the total was 3,764.

5.2 Total, per capita and percentage distribution of government expenditure on health, by level of government, years ended Mar. 31, 1967-73

Year	Federal	Provincial ¹	Municipal ²	Total
Total expenditure (million dollars)				
1967	515.9	1,333.9	57.0	1,906.8
1968	622.4	1,585.2	61.3	2,268.9
1969	750.8	1,823.7	80.1	2,654.6
1970	1,036.8	2,254.0	119.0	3,409.8
1971	1,307.6	2,789.0	131.3	4,227.9
1972	1,603.4	3,152.7	90.0	4,846.1
1973	1,789.0	3,563.3	109.8P	5,462.1
Per capita expenditure ³ (dollars)				
1967 ^r	25.28	65.38	2.79	93.45
1968 ^r	30.06	76.58	2.96	109.60
1969 ^r	35.75	86.84	3.81	126.40
1970 ^r	48.68	105.82	5.59	160.09
1971 ^r	60.54	129.12	6.08	195.74
1972 ^r	73.55	144.62	4.13	222.30
1973	80.95	161.24	4.97P	247.16
Percentage distribution				
1967	27.1	70.0	3.0	100.0
1968	27.4	70.0	2.7	100.0
1969	28.3	68.7	3.0	100.0
1970	30.4	66.1	3.5	100.0
1971	30.9	66.0	3.1	100.0
1972	33.1 ^r	65.1 ^r	1.8	100.0
1973	32.8	65.2	2.0P	100.0

¹Excludes transfer payments by federal government.

²Excludes transfer payments by provincial governments.

³Based on latest census population data.

5.3 Number and bed capacity of operating public, proprietary and federal hospitals as at Jan. 1, 1972-74

Type	1972		1973		1974	
	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds
General	918	123,071	913	125,253	903	124,949
Allied special	355	28,764	353	28,604	356	28,991
Mental	125	59,553	125	56,466	125	44,607
Tuberculosis	24	2,908	20	2,327	12	1,174
Total	1,422	214,296	1,411	212,650	1,396	199,721

5.4 Number and bed capacity of operating public, proprietary and federal hospitals, by province and type, as at Jan. 1, 1974

Province or territory and category	Type of hospital								
	General			Allied special			Total, general and allied special		
	Hos-pitals	Beds	Beds per 1,000 popula-tion ¹	Hos-pitals	Beds	Beds per 1,000 popula-tion ¹	Hos-pitals	Beds	Beds per 1,000 popula-tion ¹
Newfoundland									
Public	33	2,590	4.8	14	511	0.9	47	3,101	5.7
Proprietary	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Prince Edward Island									
Public	8	715	6.1	1	30	0.3	9	745	6.4
Proprietary	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Nova Scotia									
Public	43	4,251	5.2	4	529	0.7	47	4,780	5.9
Proprietary	—	—	—	—	—	—	—	—	—
Federal	2	522	0.6	—	—	—	2	522	0.6
New Brunswick									
Public	37	4,375	6.6	1	20	—	38	4,395	6.6
Proprietary	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Quebec									
Public	127	27,668	4.5	59	9,218	1.5	186	36,886	6.0
Proprietary	4	267	—	44	2,506	0.4	48	2,773	0.5
Federal	2	520	0.1	8	1,162	0.2	10	1,682	0.3
Ontario									
Public	189	42,677	5.3	44	6,644	0.8	233	49,321	6.1
Proprietary	7	183	—	50	1,194	0.1	57	1,377	0.2
Federal	5	1,762	0.2	8	32	—	13	1,794	0.2
Manitoba									
Public	79	5,654	5.6	4	724	0.7	83	6,378	6.3
Proprietary	—	—	—	1	40	—	1	40	—
Federal	3	664	0.7	13	47	—	16	711	0.7
Saskatchewan									
Public	131	6,685	7.4	8	929	1.0	139	7,614	8.4
Proprietary	—	—	—	—	—	—	—	—	—
Federal	2	109	0.1	1	4	—	3	113	0.1
Alberta									
Public	118	10,909	6.4	29	3,173	1.9	147	14,082	8.2
Proprietary	—	—	—	—	—	—	—	—	—
Federal	5	910	0.5	3	6	—	8	916	0.5
British Columbia									
Public	92	12,480	5.2	23	2,057	0.9	115	14,537	6.1
Proprietary	2	16	—	—	—	—	2	16	—
Federal	3	1,516	0.6	—	—	—	3	1,516	0.6
Yukon Territory									
Public	—	—	—	1	4	0.2	1	4	0.2
Federal	3	142	7.5	3	14	0.7	6	156	8.2
Northwest Territories									
Public	5	204	5.4	—	—	—	5	204	5.4
Proprietary	—	—	—	—	—	—	—	—	—
Federal	3	130	3.4	37	147	3.9	40	277	7.3
Canada									
Public	862	118,208	5.3	188	23,839	1.1	1,050	142,047	6.3
Proprietary	13	466	—	95	3,740	0.2	108	4,206	0.2
Federal	28	6,275	0.3	73	1,412	0.1	101	7,687	0.3

5.4 Number and bed capacity of operating public, proprietary and federal hospitals, by province and type, as at Jan. 1, 1974 (concluded)

Province or territory and category	Type of hospital						Total, all hospitals		
	Mental			Tuberculosis					
	Hos-pitals	Beds	Beds per 1,000 popula-tion ¹	Hos-pitals	Beds	Beds per 1,000 popula-tion ¹	Hos-pitals	Beds	Beds per 1,000 popula-tion ¹
Newfoundland									
Public	1	450	0.8	—	—	—	48	3,551	6.6
Proprietary	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Prince Edward Island									
Public	2	296	2.5	1	30	0.3	12	1,071	9.2
Proprietary	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Nova Scotia									
Public	5	1,700	2.1	2	352	0.4	54	6,832	8.4
Proprietary	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	2	522	0.6
New Brunswick									
Public	3	1,440	2.2	—	—	—	41	5,835	8.8
Proprietary	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Quebec									
Public	30	8,803	1.4	5	461	0.1	221	46,150	7.5
Proprietary	2	126	—	—	—	—	50	2,899	0.5
Federal	—	—	—	—	—	—	10	1,682	0.3
Ontario ²									
Public	42	16,513	2.0	—	—	—	275	65,834	8.1
Proprietary	12	894	0.1	—	—	—	69	2,271	0.3
Federal	—	—	—	—	—	—	13	1,794	0.2
Manitoba									
Public	8	2,418	2.4	—	—	—	91	8,796	8.7
Proprietary	—	—	—	—	—	—	1	40	—
Federal	—	—	—	—	—	—	16	711	0.7
Saskatchewan									
Public	4	1,803	2.0	1	128	0.1	144	9,545	10.5
Proprietary	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	3	113	0.1
Alberta									
Public	8	4,584	2.7	1	55	—	156	18,721	10.9
Proprietary	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	8	916	0.5
British Columbia									
Public	7	5,510	2.3	2	148	0.1	124	20,195	8.4
Proprietary	1	70	—	—	—	—	3	86	—
Federal	—	—	—	—	—	—	3	1,516	0.6
Yukon Territory									
Public	—	—	—	—	—	—	1	4	0.2
Federal	—	—	—	—	—	—	6	156	8.2
Northwest Territories									
Public	—	—	—	—	—	—	5	204	5.4
Proprietary	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	40	277	7.3
Canada									
Public	110	43,517	1.9	12	1,174	0.1	1,172	186,738	8.3
Proprietary	15	1,090	—	—	—	—	123	5,296	0.2
Federal	—	—	—	—	—	—	101	7,687	0.3

¹Based on estimated population as at June 1, 1974.

²Tuberculosis sanatoria included under allied special.

5.5 Movement of patients¹ and patient-days in reporting public, proprietary and federal hospitals, 1971 and 1972

Type of service and item	1971 ¹	1972	Type of service and item	1971 ¹	1972
PUBLIC HOSPITALS					
General			Allied special		
Beds set up at Dec. 31	115,220	116,475	Beds set up at Dec. 31	22,408	22,878
Admissions	3,366,529	3,405,032	Admissions	189,169	187,594
Per 1,000 population	156.1	156.1	Per 1,000 population	8.8	8.6
Patient-days	33,617,700	33,131,616	Patient-days	7,289,625	7,389,973
Per 1,000 population	1,558.6	1,518.4	Per 1,000 population	338.0	338.7
Av. daily no. of patients	92,103.3	90,523.5	Av. daily no. of patients	19,971.6	20,191.2
Per 1,000 population	4.3	4.1	Per 1,000 population	0.9	0.9
Percentage occupancy ²	79.9	78.2	Percentage occupancy ²	88.4	86.3

5.5 Movement of patients¹ and patient-days in reporting public, proprietary and federal hospitals, 1971 and 1972 (concluded)

Type of service and item	1971 ^r	1972	Type of service and item	1971 ^r	1972
Mental			Per 1,000 population	68.9	69.6
Beds set up at Dec. 31	57,088	53,212	Av. daily no. of patients	4,072.5	4,150.0
Admissions	51,596	55,362	Per 1,000 population	0.2	0.2
Per 1,000 population	2.4	2.5	Percentage occupancy ²	94.4	94.6
Patient-days	19,253,011	17,928,613	Mental		
Per 1,000 population	892.6	821.7	Beds set up at Dec. 31	945	984
Av. daily no. of patients	52,748.0	48,985.3	Admissions	4,003	3,819
Per 1,000 population	2.4	2.2	Per 1,000 population	0.2	0.2
Percentage occupancy ²	94.6	92.4	Patient-days	335,139	340,442
Tuberculosis			Per 1,000 population	15.5	15.6
Beds set up at Dec. 31	2,587	1,312	Av. daily no. of patients	918.2	930.2
Admissions	5,265	3,080	Per 1,000 population	--	--
Per 1,000 population	0.2	0.1	Percentage occupancy ²	98.3	96.0
Patient-days	538,939	299,339	FEDERAL HOSPITALS		
Per 1,000 population	25.0	13.7	General		
Av. daily no. of patients	1,476.5	817.9	Beds set up at Dec. 31	6,236	5,825
Per 1,000 population	0.1	--	Admissions	60,896	56,976
Percentage occupancy ²	51.6	57.7	Per 1,000 population	2.8	2.6
PROPRIETARY HOSPITALS			Patient-days	1,689,559	1,575,984
General			Per 1,000 population	78.3	72.2
Beds set up at Dec. 31	606	449	Av. daily no. of patients	4,628.9	4,306.0
Admissions	20,564	14,903	Per 1,000 population	0.2	0.2
Per 1,000 population	1.0	0.7	Percentage occupancy ²	71.6	71.1
Patient-days	195,577	135,903	Allied special		
Per 1,000 population	9.1	6.2	Beds set up at Dec. 31	1,383	1,368
Av. daily no. of patients	535.8	371.3	Admissions	3,812	3,798
Per 1,000 population	--	--	Per 1,000 population	0.2	0.2
Percentage occupancy ²	81.4	83.5	Patient-days	348,527	365,732
Allied special			Per 1,000 population	16.2	16.8
Beds set up at Dec. 31	4,295	4,369	Av. daily no. of patients	954.9	999.3
Admissions	14,237	13,872	Per 1,000 population	--	--
Per 1,000 population	0.7	0.6	Percentage occupancy ²	70.2	73.5
Patient-days	1,486,458	1,518,918			

¹Patients refer to adults and children. All ratios are based on population estimates as at June 1 of the year concerned.
²Based on rated bed capacity.

5.6 Average length of stay of adults and children in public general and allied special hospitals, by province, 1972 (days)

Type of hospital	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Canada ¹
General											
Non-teaching with no long-term units											
1 - 24 beds	5.13	7.69	7.51	7.56	6.68	7.35	7.09	6.82	7.54	6.28	6.83
25 - 49 "	6.77	9.07	7.67	8.09	7.91	7.86	7.65	7.17	6.69	6.89	7.23
50 - 99 "	7.74	7.24	8.85	8.05	7.92	8.29	6.37	7.98	7.63	7.83	7.85
100 - 199 "	8.45	9.21	10.10	9.07	8.19	8.28	8.42	8.93	7.63	8.20	8.50
200+ "	9.63	10.15	10.07	11.09	9.42	8.76	8.94	12.28	8.24	7.76	9.07
Non-teaching with long-term units											
1 - 99 beds	--	--	--	--	11.98	10.48	9.42	--	9.31	8.67	10.19
100 - 199 "	--	7.94	--	--	11.81	9.60	9.52	--	--	10.27	9.90
200+ "	--	--	--	--	13.75	10.40	--	12.64	--	11.00	10.75
Total, non-teaching	7.40	8.70	9.36	9.39	9.19	9.37	7.89	7.90	7.45	9.04	8.91
Teaching, full											
1 - 499 beds	19.46	--	11.30	--	12.29	9.75	--	--	--	--	11.67
500+ "	--	--	13.68	--	12.51	11.13	10.55	12.81	9.88	10.05	11.22
Teaching, partial											
1 - 499 beds	11.48	--	--	11.53	9.96	11.69	9.20	10.62	--	9.24	10.27
500+ "	--	--	--	15.98	12.22	9.47	--	10.41	10.19	9.87	10.55
Total, general	9.44	8.70	10.21	10.26	10.40	9.82	8.68	8.95	8.62	9.30	9.65
Children's	10.89	--	8.32	--	8.21	8.58	7.63	--	10.05	5.90	8.44
Convalescent/rehabilitation	60.47	24.35	28.05	47.90	51.81	35.76	39.01	--	44.96	43.59	42.31
Chronic/extended care	236.15	--	--	168.44	253.17	200.58	108.73	--	288.23	510.69	225.22
Other	4.54	--	7.26	--	11.75	9.59	--	118.33	7.55	7.72	12.50
All public general and allied special hospitals	9.97	8.90	10.14	10.52	12.85	11.18	10.10	9.67	10.89	10.01	11.11

¹Includes the Yukon Territory and Northwest Territories.

5.7 Full-time personnel employed in reporting public, proprietary and federal hospitals, by province, 1972

Province or territory	General ¹		General and allied special ¹		Mental		Tuberculosis	
	Number	Per 100 rated beds	Number	Per 100 rated beds	Number	Per 100 rated beds	Number	Per 100 rated beds
Newfoundland	5,585	224.0	6,318	210.6	733	88.6	197	88.3
Prince Edward Island	1,194	165.6	1,239	165.0	338	114.2	24	160.0
Nova Scotia	8,976	184.8	10,002	185.7	1,486	86.1	396	145.6
New Brunswick	8,594	197.8	8,743	196.5	1,180	75.4	—	—
Quebec	62,909	218.1	78,755	189.1	12,473	69.8	379	73.3
Ontario	89,326	201.7	100,523	190.1	19,550	112.3	—	—
Manitoba	11,482	198.7	13,742	194.7	2,281	96.2	—	—
Saskatchewan	9,621	142.1	10,189	132.3	1,355	74.3	149	103.5
Alberta	19,358	165.1	22,334	149.8	3,398	73.5	93	169.1
British Columbia	21,188	155.4	22,777	151.0	4,014	69.5	187	97.4
Yukon Territory	182	124.7	193	120.6	—	—	—	—
Northwest Territories	210	65.0	321	69.0	—	—	—	—
Canada	238,625	192.6	275,136	179.3	46,808	86.2	1,425	100.5

¹Includes all medical interns and residents, other instructors, school staff and students of formally organized educational programs. Excludes all other medical staff.

5.8 Revenue and expenditure of operating public general hospitals, by province, 1971 and 1972

Year and province or territory	Operating hospitals	Total revenue \$'000	Expenditure				Total \$'000
			Gross salaries and wages ¹ %	Medical and surgical supplies %	Drugs %	Supplies and other expenses %	
1971							
Newfoundland	33	39,342	62.0	3.6	4.0	30.3	41,920
Prince Edward Island	8	8,398	66.1	3.4	3.2	27.4	8,615
Nova Scotia	43	73,702	63.1	3.7	3.1	30.0	74,465
New Brunswick	37	65,153	67.5	3.7	2.8	26.1	66,458
Quebec	128	566,020	73.4	3.4	3.1	20.2	603,357
Ontario	187	853,118	69.1	3.2	2.7	24.9	860,013
Manitoba	80	89,329	66.5	3.6	3.5	26.3	89,312
Saskatchewan	133	89,671	66.4	3.3	3.4	26.8	92,617
Alberta	116	158,476	68.7	3.1	3.1	25.1	164,240
British Columbia	88	193,282	73.9	3.5	3.0	19.5	201,640
Yukon Territory	—	—	—	—	—	—	—
Northwest Territories	6	1,813	60.4	3.8	3.1	32.7	1,997
Canada	859	2,138,304	70.1	3.3	3.0	23.6	2,204,634
1972							
Newfoundland	33	44,799	62.5	3.6	3.8	30.1	47,345
Prince Edward Island	8	9,318	66.1	3.5	2.9	27.5	9,502
Nova Scotia	43	80,657	63.5	3.8	3.2	29.6	80,874
New Brunswick	38	73,030	64.9	3.8	2.7	28.7	74,661
Quebec	127	652,504	73.1	3.3	2.8	20.7	662,681
Ontario	189	946,975	69.0	3.2	2.7	25.2	955,186
Manitoba	80	101,163	66.2	3.5	3.2	27.0	101,162
Saskatchewan	132	97,172	66.0	3.2	3.3	27.4	100,128
Alberta	116	171,746	68.7	3.1	3.0	25.3	180,606
British Columbia	91	218,488	73.5	3.4	2.7	20.4	225,747
Yukon Territory	—	—	—	—	—	—	—
Northwest Territories	5	2,171	60.9	3.5	2.5	33.1	2,337
Canada	862	2,398,023	69.8	3.3	2.8	24.1	2,440,229

¹Includes medical staff remuneration.

5.9 Patient-day revenue¹ and expenditure ratios of operating public hospitals, by province and type of hospital, 1972 (dollars)

Province and type of hospital	Revenue		Expenditure				
	Gross income from in-patient services	Total	Gross salaries and wages ²	Medical and surgical supplies	Drugs	Supplies and other expenses	Total
NEWFOUNDLAND							
General	52.70	63.34	41.84	2.40	2.53	20.18	66.94
Allied special	—	—	—	—	—	—	—
Children's	57.62	67.05	43.90	2.96	2.01	21.53	70.39
Convalescent/rehabilitation	40.26	47.52	33.75	0.51	0.34	14.58	49.17
Chronic/extended care	10.70	11.59	13.17	0.21	0.15	3.02	16.56
Tuberculosis	43.16	44.07	33.82	0.61	1.05	8.59	44.07
PRINCE EDWARD ISLAND							
General	40.41	47.16	31.77	1.70	1.39	13.23	48.09
Allied special	—	—	—	—	—	—	—
Convalescent/rehabilitation	37.95	44.61	35.15	0.21	0.46	8.80	44.61
Mental	13.31	13.47	11.81	0.10	0.36	4.06	16.33
Tuberculosis	42.38	43.68	33.91	0.57	0.68	8.51	43.67

5.9 Patient-day revenue¹ and expenditure ratios of operating public hospitals, by province and type of hospital, 1972 (dollars) (continued)

Province and type of hospital	Revenue		Expenditure				
	Gross income from in-patient services	Total	Gross salaries and wages ²	Medical and surgical supplies	Drugs	Supplies and other expenses	Total
NOVA SCOTIA							
General	53.25	65.55	41.70	2.47	2.08	19.48	65.72
Allied special							
Children's	89.16	101.73	62.18	3.80	2.02	36.21	104.21
Convalescent/rehabilitation	33.93	42.32	28.78	0.69	0.71	11.67	41.85
Other	73.74	77.67	49.36	1.92	1.35	25.06	77.69
Mental	24.51	27.79	20.28	0.12	0.46	6.61	27.47
Tuberculosis	53.56	61.82	48.62	0.54	0.77	11.89	61.82
NEW BRUNSWICK							
General	51.44	60.72	40.25	2.35	1.65	17.82	62.07
Allied special							
Convalescent/rehabilitation	41.00	46.26	34.23	0.62	0.44	11.88	47.16
Chronic/extended care	27.81	28.41	21.07	0.56	0.61	6.20	28.44
Mental	17.98	18.28	14.00	0.08	0.23	3.97	18.28
QUEBEC							
General	85.91	90.94	67.74	3.06	2.63	18.92	92.36
Allied special							
Children's	118.99	137.01	103.17	3.83	2.67	29.37	139.05
Convalescent/rehabilitation	38.38	41.44	29.62	0.43	0.54	11.60	42.20
Chronic/extended care	29.08	29.91	22.81	0.33	0.62	5.88	29.65
Other	92.93	98.33	73.01	2.58	2.05	20.14	97.79
Mental	22.89	23.64	17.06	0.07	0.48	5.93	23.54
Tuberculosis	41.41	42.35	29.46	0.20	1.55	9.90	41.11
ONTARIO							
General	66.02	75.28	52.43	2.41	2.03	19.05	75.92
Allied special							
Children's	114.26	142.35	98.09	3.72	5.80	43.22	150.82
Convalescent/rehabilitation	43.04	48.29	31.24	0.38	0.43	16.47	48.52
Chronic/extended care	30.57	31.85	23.24	0.37	0.55	7.49	31.65
Other	99.29	144.30	97.35	1.98	4.74	48.08	152.15
Mental	34.37	34.97	28.41	0.07	0.31	6.24	35.03
MANITOBA							
General	60.25	68.36	45.29	2.42	2.22	18.43	68.36
Allied special							
Children's	92.99	115.92	84.81	3.39	3.71	24.02	115.92
Convalescent/rehabilitation	44.22	55.83	34.90	0.84	1.33	18.76	55.83
Chronic/extended care	32.43	34.20	26.35	0.48	0.92	6.45	34.20
Mental	21.12	21.46	17.23	0.06	0.42	3.76	21.47
SASKATCHEWAN							
General	45.02	50.16	34.15	1.66	1.73	14.16	51.69
Allied special							
Other	33.29	40.64	29.25	1.19	0.36	9.20	40.00
Mental	17.12	17.68	14.12	0.07	0.33	3.16	17.68
Tuberculosis	31.27	31.91	22.35	0.20	0.79	7.29	30.63
ALBERTA							
General	50.42	57.59	41.55	1.86	1.82	15.32	60.56
Allied special							
Children's	47.65	59.00	47.97	0.93	0.86	9.20	58.97
Convalescent/rehabilitation	48.86	60.76	41.66	0.45	0.39	18.57	61.08
Chronic/extended care	18.20	19.37	13.70	0.21	0.35	6.42	20.68
Other	99.45	120.81	91.47	1.59	3.58	26.50	123.14
Mental	14.51	18.86	14.22	0.05	0.25	4.49	19.01
Tuberculosis	48.87	48.87	41.42	0.30	1.47	5.68	48.87
BRITISH COLUMBIA ^e							
General	53.47	58.34	44.30	2.07	1.63	12.27	60.27
Allied special							
Children's	68.84	92.57	78.72	1.90	1.76	26.04	108.41
Convalescent/rehabilitation	32.81	38.32	30.84	0.28	0.33	8.09	39.55
Chronic/extended care	20.90	21.28	19.78	0.25	0.32	5.72	26.07
Other	62.81	108.11	84.70	1.71	3.07	21.44	110.93
Mental	20.44	21.72	16.77	0.11	0.30	4.54	21.72
Tuberculosis	49.18	49.18	34.88	0.38	1.58	12.34	49.18

5.9 Patient-day revenue¹ and expenditure ratios of operating public hospitals, by province and type of hospital, 1972 (dollars) (concluded)

Province and type of hospital	Revenue		Expenditure				
	Gross income from in-patient services	Total	Gross salaries and wages ²	Medical and surgical supplies	Drugs	Supplies and other expenses	Total
NORTHWEST TERRITORIES							
General	47.92	55.64	36.49	2.10	1.49	19.81	59.89
CANADA							
General	64.49	71.99	51.20	2.41	2.08	17.56	73.26
Allied special							
Children's	102.98	123.12	87.97	3.53	3.52	32.43	127.46
Convalescent/rehabilitation	40.49	46.71	32.41	0.45	0.54	13.85	47.24
Chronic/extended care	27.33	28.38	21.34	0.33	0.55	6.51	28.72
Other	81.56	97.63	70.99	2.09	2.36	23.41	98.85
Mental	25.24	26.21	20.29	0.07	0.37	5.49	26.22
Tuberculosis	43.64	45.58	33.57	0.34	1.23	9.81	44.95

¹Adults and children.²Includes medical staff remuneration.

5.10 Hospital separations, separations and days per 100,000 population, and average days of stay, by diagnostic category, 1972¹

Diagnostic category ^a	Separations	Separations per 100,000 population	Days per 100,000 population	Average days of stay
Infective and parasitic diseases	103,616	475	4,386	9.2
Neoplasms	205,791	944	16,272	17.2
Endocrine, nutritional, and metabolic diseases	71,809	329	5,793	17.6
Diseases of the blood and blood-forming organs	26,930	124	1,336	10.8
Mental disorders	138,313	634	11,167	17.6
Diseases of the nervous system and sense organs	150,387	690	11,966	17.3
Diseases of the circulatory system	357,071	1,638	38,520	23.5
Diseases of the respiratory system	496,359	2,277	16,428	7.2
Diseases of the digestive system	446,236	2,047	19,646	9.6
Diseases of the genito-urinary system	343,702	1,576	12,319	7.8
Complications of pregnancy, childbirth and the puerperium	492,108	4,511	24,699	5.5
Diseases of the skin and subcutaneous tissue	61,520	282	2,625	9.3
Diseases of the musculoskeletal system and connective tissue	151,928	697	10,409	14.9
Congenital anomalies	41,062	188	2,346	12.5
Symptoms and ill-defined conditions	127,020	583	3,956	6.8
Accidents, poisonings, and violence (nature of injury)	340,260	1,561	17,073	10.9
Supplementary classifications	80,502	369	3,012	8.2
All causes	3,634,614	16,670	189,611	11.4

¹Excludes newborn and data for the Yukon Territory and Northwest Territories; includes 1973 data for New Brunswick.^aMajor groupings of the International Classification of Diseases, Adapted — 8th Revision. More detailed information is available in Statistics Canada publication *Hospital morbidity* (Cat. No. 82-206) and *Hospital morbidity — Canadian diagnostic list* (Cat. No. 82-209).

5.11 Hospital separations per 100,000 population, by diagnostic category and age group, 1972¹

Diagnostic category ^a	Under 15	15-24	25-44	45-64	65+	Total
Infective and parasitic diseases	929	321	231	254	497	475
Neoplasms	120	267	791	1,894	3,689	944
Endocrine, nutritional, and metabolic diseases	179	143	220	534	1,156	329
Diseases of the blood and blood-forming organs	182	70	50	89	345	124
Mental disorders	106	564	957	1,039	727	634
Diseases of the nervous system and sense organs	716	310	449	839	1,874	690
Diseases of the circulatory system	54	161	843	3,185	9,507	1,638
Diseases of the respiratory system	4,576	1,186	855	1,359	3,204	2,277
Diseases of the digestive system	923	1,525	2,112	3,274	4,182	2,047
Diseases of the genito-urinary system	494	1,109	2,231	2,364	2,626	1,576
Complications of pregnancy, childbirth and the puerperium	29	11,431	9,421	59	—	4,511
Diseases of the skin and subcutaneous tissue	287	313	244	261	359	282
Diseases of the musculoskeletal system and connective tissue	169	444	791	1,296	1,467	697
Congenital anomalies	422	139	93	69	48	188
Symptoms and ill-defined conditions	509	440	534	710	1,026	583
Accidents, poisonings, and violence (nature of injury)	1,242	1,876	1,403	1,471	2,646	1,561
Supplementary classifications	49	178	1,017	193	335	369
All causes	10,974	14,718	17,467	18,860	33,688	16,670

¹Excludes newborn and data for the Yukon Territory and Northwest Territories; includes 1973 data for New Brunswick.^aSee footnote to Table 5.10.

5.12 Separated cases and operations in general and allied special hospitals, by age group, 1972¹

Item		Under 15	15-24	25-44	45-64	65+	Total
All separated cases							
Cases	No.	689,084	605,595	964,945	772,520	602,470	3,634,614
Days in hospital	"	4,580,126	3,906,693	7,626,376	10,362,252	14,865,297	41,340,744
Av. days per case	"	6.7	6.5	7.9	13.4	24.7	11.4
Separated cases undergoing surgery							
Cases (primary operations)	No.	272,587	345,359	598,287	392,622	200,692	1,809,547
Days in hospital	"	1,425,855	2,159,366	4,425,603	4,611,974	3,686,746	16,309,544
Av. days per case	"	5.2	6.3	7.4	11.8	18.4	9.0
Rate per 100,000 population							
All separated cases		10,974	14,718	17,467	18,860	33,688	16,670
All operated cases		4,341	8,394	10,830	9,585	11,222	8,300
Days of all separated cases		72,938	94,947	138,051	252,978	831,207	189,611
Days of all operated cases		22,707	52,481	80,112	112,594	206,148	74,804
Population ²		6,279,500	4,114,600	5,524,300	4,096,100	1,788,400	21,802,900

¹Excludes newborn and data for the Yukon Territory and Northwest Territories; includes 1973 data for New Brunswick.²Estimate of June 1, 1972, exclusive of the Yukon Territory and Northwest Territories.5.13 Primary operations in general and allied special hospitals, by age group and by sex, 1972¹

Operation		Under 15	15-24	25-44	45-64	65+	Total
Neurosurgery	M	1,680	1,325	2,951	4,024	1,570	11,550
	F	1,147	811	2,180	3,246	1,231	8,615
Ophthalmology	M	7,317	2,096	3,049	6,031	8,341	26,834
	F	6,269	1,815	2,422	6,396	12,235	29,137
Otorhinolaryngology	M	62,024	17,213	16,451	8,424	2,471	106,583
	F	57,801	21,661	14,322	7,097	1,624	102,505
Thyroid, parathyroid and adrenals	M	247	189	372	390	111	1,309
	F	283	540	1,630	1,786	410	4,649
Vascular and cardiac surgery	M	1,683	950	3,984	11,276	4,959	22,852
	F	1,571	1,186	10,641	11,094	3,424	27,916
Thoracic surgery	M	457	731	1,046	2,317	1,545	6,096
	F	340	305	681	1,233	843	3,402
Abdominal surgery	M	22,234	13,490	27,747	40,920	21,457	125,848
	F	11,636	19,578	38,566	39,688	18,274	127,742
Proctological surgery	M	599	3,952	10,287	7,725	2,327	24,890
	F	472	3,759	7,168	5,631	1,852	18,882
Urological surgery	M	15,390	4,845	10,706	18,549	26,182	75,672
	F	3,328	1,715	4,750	5,925	3,704	19,422
Breast surgery	M	91	225	206	256	203	981
	F	129	2,232	7,033	7,621	2,695	19,710
Gynecological surgery	F	625	27,859	160,611	60,660	8,930	258,685
Obstetrical procedures	F	611	129,699	137,833	717	—	268,860
Orthopedic surgery	M	17,185	24,317	31,519	24,162	9,060	106,243
	F	12,488	11,747	17,384	24,335	18,095	84,049
Plastic surgery	M	8,652	8,310	8,117	6,699	3,219	34,997
	F	6,861	5,950	7,613	6,338	3,469	30,231
Oral and maxillofacial surgery	M	1,262	2,111	2,198	1,233	424	7,228
	F	1,011	992	1,242	984	440	4,669
Dental surgery	M	5,372	6,851	6,521	4,106	1,039	23,889
	F	6,268	9,029	7,572	3,918	891	27,678
Biopsy	M	955	851	2,191	5,084	4,371	13,452
	F	732	1,889	5,678	6,105	3,262	17,666
Diagnostic endoscopy	M	2,628	1,407	4,823	10,446	9,553	28,857
	F	3,039	2,584	6,170	6,991	5,262	24,046
Diagnostic radiography	M	2,248	1,950	6,002	9,314	4,835	24,349
	F	2,645	2,754	5,881	6,569	3,515	21,364
Radiotherapy and related therapies	M	88	91	289	653	484	1,605
	F	80	69	581	1,715	897	3,342
Physical medicine and rehabilitation	M	1,786	742	1,400	2,217	2,172	8,317
	F	1,291	785	1,496	2,371	2,760	8,703
Other non-surgical procedures	M	1,223	3,381	8,508	11,767	1,716	26,595
	F	821	3,369	8,462	6,605	836	20,093
Other surgical and non-surgical procedures	M	4	—	3	1	3	11
	F	14	4	1	3	1	23
All operations	M	153,125	95,027	148,370	175,594	106,042	678,158
	F	119,462	250,332	449,917	217,028	94,650	1,131,389
	T	272,587	345,359	598,287	392,622	200,692	1,809,547

¹Excludes newborn and data for the Yukon Territory and Northwest Territories; includes 1973 data for New Brunswick.

5.14 Reported cases of selected notifiable diseases and rate per 100,000 population, by province, 1973

International List No.	Disease	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
<i>Number of cases</i>														
009.1	Diarrhoea of the newborn, epidemic	—	14	9	—	24	1	1	—	3	—	—	—	51
032	Diphtheria	1	—	—	—	—	18	4	—	89	51	—	6	169
004	Dysentery, bacillary	497	1	15	1	161	363	180	125	322	212	—	50	1,927
062.1	Encephalitis, western equine	—	1	—	—	—	1	—	—	—	—	—	—	—
—	Food poisoning, bacterial	1	—	4	23	316	—	—	—	9	25	—	2	380
005.0	Staphylococcal	1	—	4	23	310	1	—	—	9	25	—	—	372
005.1	Botulism	—	—	—	—	6	—	—	—	—	—	—	2	8
—	Hepatitis, infectious (including serum hepatitis)	100	227	140	62	186	1,370	1,017	571	1,321	1,780	15	371	7,160
070	Hepatitis, infectious	97	227	123	52	139	1,155	977	542	1,230	1,755	15	368	6,680
999.2	Hepatitis, serum	3	1	17	10	47	215	40	29	91	25	—	3	480
055	Measles	308	1	419	18	4,372	2,829	1,584	180	561	158	3	479	10,911
—	Meningitis, aseptic, due to enteroviruses	—	4	6	4	91	1	60	6	4	20	—	4	199
045.0	Coxsackie virus	—	—	4	—	26	1	—	—	—	—	—	—	30
045.1	ECHO virus	—	—	—	—	47	1	—	—	—	—	—	—	47
045.9	Not specified	—	4	2	4	18	1	60	6	4	20	—	4	122
036	Meningococcal infections	58	2	16	16	78	158	31	21	7	47	1	11	446
056	Rubella (German measles)	402	1	64	34	1,057	604	138	53	718	77	6	36	3,189
—	Salmonella infections, other	59	33	103	114	1,600	1,200	53	225	545	320	1	8	4,261
003.0	With food as vehicle	—	20	20	2	745	1	—	14	48	—	—	—	849
003.9	Without mention of food as vehicle	59	13	83	112	855	1,200	53	211	497	320	1	8	3,412
034	Streptococcal sore throat and scarlet fever	241	4,245	1,296	198	1,229	2,437	709	601	3,624	836	30	429	15,875
010.011, 012-019	Tuberculosis	166	9	100	72	1,121	1,000	219	171	269	394	3	39	3,563
—	Typhoid and paratyphoid fever	3	2	2	17	46	60	3	4	3	3	—	1	144
001	Typhoid	—	2	2	14	33	42	1	2	2	1	—	1	100
002	Paratyphoid	3	—	—	3	13	18	2	2	1	2	—	—	44
—	Veneral diseases	513	62	1,167	396	4,187	15,653	3,794	3,827	7,458	9,261P	392	2,388	49,098
098	Gonococcal infections	505	56	1,044	369	3,658	13,594	3,566	3,637	7,300	8,832	384	2,384	45,329
090-097	Syphilis	8	6	122	27	529	2,059	228	189	158	428	8	4	3,766
099.0,099.1, 099.2	Other	—	1	1	—	—	—	—	1	—	1	—	—	3
033	Whooping cough	11	21	38	17	279	407	40	41	34	102	—	7	997

5.14 Reported cases of selected notifiable diseases and rate per 100,000 population, by province, 1973 (concluded)

International List No.	Disease	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
<i>Rate per 100,000 population</i>														
009.1	Diarrhoea of the newborn, epidemic	—	12.2	1.1	—	0.4	¹	0.1	—	0.2	—	—	—	0.4
032	Diphtheria	0.2	—	—	—	—	0.2	0.4	—	5.3	2.2	—	15.9	0.8
004	Dysentery, bacillary	91.9	0.9	1.9	0.2	2.6	4.6	18.0	13.8	19.1	9.2	—	132.3	8.7
062.1	Encephalitis, western equine	—	¹	—	—	—	¹	—	—	—	—	—	—	—
005.0	Food poisoning, bacterial	0.2	—	0.5	3.5	5.2	—	—	—	0.5	1.1	—	5.3	1.7
005.1	Staphylococcal	0.2	—	0.5	3.5	5.1	¹	—	—	0.5	1.1	—	—	2.6
005.1	Botulism	—	—	—	—	0.1	—	—	—	—	—	—	5.3	—
070	Hepatitis, infectious (including serum hepatitis)	18.5	197.6	17.4	9.5	3.1	17.3	101.9	62.9	78.5	76.9	76.1	981.5	32.4
999.2	Hepatitis, infectious	17.9	197.6	15.3	8.0	2.3	14.5	97.9	59.7	73.1	75.8	76.1	973.5	30.2
055	Hepatitis, serum	0.6	¹	2.1	1.5	0.8	2.7	4.0	3.2	5.4	1.1	—	7.9	2.2
055	Measles	57.0	¹	52.1	2.8	71.9	35.6	158.7	19.8	33.3	6.8	15.2	1,269.2	49.6
045.0	Meningitis, aseptic, due to enteroviruses	—	3.5	0.7	0.6	1.5	¹	6.0	0.7	0.2	0.9	—	10.6	1.4
045.1	Coxsackie virus	—	—	0.5	—	0.4	¹	—	—	—	—	—	—	0.2
045.1	ECHO virus	—	—	—	—	0.8	¹	—	—	—	—	—	—	0.3
045.9	Not specified	—	3.5	0.2	0.6	0.3	¹	6.0	0.7	0.2	0.9	—	10.6	0.9
036	Meningococcal infections	10.7	1.7	2.0	2.5	1.3	2.0	3.1	2.3	0.4	2.0	5.1	29.1	2.0
056	Rubella (German measles)	74.3	¹	8.0	5.2	17.4	7.6	13.8	5.8	42.6	3.3	30.5	95.2	14.5
030.0	Salmonella infections, other	10.9	28.7	12.8	17.5	26.3	15.1	5.3	24.8	32.4	13.8	5.1	21.2	19.3
030.0	With food as vehicle	—	17.4	2.5	0.3	12.3	¹	—	1.5	2.9	—	—	—	6.0
030.9	Without mention of food as vehicle	10.9	11.3	10.3	17.2	14.1	15.1	5.3	23.2	29.5	13.8	5.1	21.2	15.4
034	Streptococcal sore throat and scarlet fever	44.6	3,694.5	161.0	30.4	20.2	30.7	71.1	66.2	215.3	36.1	152.3	1,134.9	71.8
010.011, 012-019	Tuberculosis	30.7	7.8	12.4	11.0	18.4	12.6	21.9	18.8	16.0	17.0	15.2	103.2	16.1
001	Typhoid and paratyphoid fever	0.6	1.7	0.2	2.6	0.8	0.8	0.3	0.4	0.2	0.1	—	2.6	0.7
002	Typhoid	—	1.7	0.2	2.1	0.5	0.5	0.1	0.2	0.1	—	—	2.6	0.5
002	Paratyphoid	0.6	—	—	0.5	0.2	0.2	0.2	0.2	0.1	—	—	—	0.2
098	Veneral diseases	94.9	54.0	145.0	60.7	68.8	197.2	380.2	421.4	443.0	400.0 ^p	1,989.8	6,317.5	222.2
090-097	Gonococcal infections	93.4	48.7	129.7	56.6	60.2	171.2	357.4	400.5	433.6	381.5	1,949.2	6,306.9	205.2
099.0, 099.1, 099.2	Syphilis	1.5	5.2	15.2	4.1	8.7	25.9	22.9	20.8	9.4	18.5	40.6	10.6	17.0
033	Other	—	¹	0.1	—	—	—	—	0.1	—	—	—	—	—
033	Whooping cough	2.0	18.3	4.7	2.6	4.6	5.1	4.0	4.5	2.0	4.4	—	18.5	4.5

¹Not reportable.

5.15 Malignant neoplasms and rate per 100,000 population, 1972

Province or territory of residence	Number of cases			Rate per 100,000 population		
	New primary sites	Deaths ¹	Hospital morbidity separations	New primary sites	Deaths	Hospital morbidity separations
Newfoundland	1,258	636	2,282	236.5	119.5	429.0
Prince Edward Island	352	170	584	311.5	150.4	516.8
Nova Scotia	2,221	1,340	5,237	279.5	168.7	659.2
New Brunswick	2,113	896	..	328.6	139.3	..
Quebec	16,774	8,974	26,814	277.2	148.3	443.2
Ontario	..	11,679	49,124	..	149.3	623.1
Manitoba	3,327	1,656	6,682	335.6	167.0	673.9
Saskatchewan	3,686	1,392	6,533	402.3	151.9	713.0
Alberta	4,271	2,022	10,323	258.2	122.3	624.2
British Columbia	8,952	3,444	14,713	398.4	153.3	654.8
Yukon Territory	36	21	..	190.5	111.1	..
Northwest Territories	59	35	..	163.9	97.2	..
Canada	43,049	32,265	122,292	307.6	147.9	578.7

¹Includes only the deaths where underlying cause was stated to be due to malignant neoplasms.

5.16 Malignant neoplasms by A List Diagnosis and rate per 100,000 population, 1972

A List Diagnosis	Cases ¹	Rate per 100,000 population ¹	Deaths	Rate per 100,000 population	Hospital separations	Rate per 100,000 population
A45 Malignant neoplasm of buccal cavity and pharynx	1,394	10.0	704	3.2	3,332	15.8
A46 Malignant neoplasm of esophagus	343	2.5	565	2.6	1,332	6.3
A47 Malignant neoplasm of stomach	1,614	11.6	2,521	11.6	4,794	22.7
A48 Malignant neoplasm of intestine except rectum	3,107	22.3	3,701	17.0	9,378	44.8
A49 Malignant neoplasm of rectum and rectosigmoid junction	1,677	12.0	1,364	6.3	4,815	22.8
A50 Malignant neoplasm of larynx	436	3.1	300	1.4	1,702	8.1
A51 Malignant neoplasm of trachea, bronchus, and lung	3,672	26.3	5,776	26.5	13,271	62.8
A52 Malignant neoplasm of bone	129	0.9	189	0.9	997	4.7
A53 Malignant neoplasm of skin	8,075	57.9	370	1.7	3,679	17.4
A54 Malignant neoplasm of breast	4,659	33.4	3,023	13.9	13,905	65.8
A55 Malignant neoplasm of cervix uteri	904	13.0	600	5.5	5,024	23.8
A56 Other malignant neoplasm of uterus	1,195	17.2	446	4.1	3,934	18.6
A57 Malignant neoplasm of prostate	2,581	36.9	1,704	15.6	8,406	39.8
A58 Malignant neoplasm of other and unspecified sites	7,453	53.5	7,978	36.6	31,406	148.6
A59 Leukemia	881	6.3	1,351	6.2	6,332	30.0
A60 Other neoplasms of lymphatic and hematopoietic tissue	1,538	11.0	1,673	7.7	9,985	47.3
Total	39,658	284.5	32,265	147.9	122,292	578.7

¹Excludes Ontario, the Yukon Territory and Northwest Territories.

5.17 Summary statistics on the incidence of tuberculosis, 1973

Province or territory, age group and origin	Notifications		Patients under treatment at Dec. 31			Persons receiving preventive out-patient drug treatment Dec. 31	Deaths
	New active cases	React- ivated cases	In- patients	Out- patients on drug treatment	Total		
PROVINCE OR TERRITORY	<i>Number</i>						
Newfoundland	166	18	43	382	425	88	14
Prince Edward Island	9	4	12	18	30	47	1
Nova Scotia	100	12	78	284	362	330	7
New Brunswick	72	6	36	251	287	243	6
Quebec	1,121	189	541	1,615	2,156	2,955	208
Ontario	1,000	171	378	2,138	2,516	7,614	86
Manitoba	219	35	56	432	488	1,167	21
Saskatchewan	171	26	49	289	338	234	13
Alberta	269	35	117	626	743	1,257	21
British Columbia	394	59	101	912	1,013	993	26
Yukon Territory	3	1	4	13	17	93	—
Northwest Territories	39	11	19	149	168	1,201	5
Canada	3,563	567	1,434	7,109	8,543	16,222	408

5.17 Summary statistics on the incidence of tuberculosis, 1973 (concluded)

Province or territory, age group and origin	Notifications		Patients under treatment at Dec. 31			Persons receiving preventive out-patient drug treatment Dec. 31	Deaths
	New active cases	React- ivated cases	In- patients	Out- patients on drug treatment	Total		
PROVINCE OR TERRITORY	Rate per 100,000 population						
Newfoundland	30.7	3.3	8.0	70.7	78.7	16.3	2.6
Prince Edward Island	7.8	3.5	10.3	15.5	25.9	40.5	0.9
Nova Scotia	12.4	1.5	9.6	35.1	44.7	40.7	0.9
New Brunswick	11.0	0.9	5.5	38.1	43.6	36.9	0.9
Quebec	18.4	3.1	8.9	26.4	35.3	48.3	3.4
Ontario	12.6	2.2	4.7	26.6	31.3	94.8	1.1
Manitoba	21.9	3.5	5.6	43.0	48.6	116.1	2.1
Saskatchewan	18.8	2.9	5.4	31.9	37.3	25.8	1.4
Alberta	16.0	2.1	6.9	36.8	43.7	73.9	1.2
British Columbia	17.0	2.5	4.3	38.5	42.8	41.9	1.1
Yukon Territory	15.2	5.1	20.0	65.0	85.0	405.0	—
Northwest Territories	103.2	29.1	50.0	392.1	442.1	3,160.5	13.2
Canada	16.1	2.6	6.4	31.9	38.3	72.7	1.8
AGE GROUP	Number						
0 - 14	350	3	86	624	710	3,063	4
15 - 24	460	17	90	805	895	3,592	4
25 - 44	1,033	148	330	2,221	2,551	4,329	31
45 - 64	1,027	261	519	2,262	2,781	3,918	144
65 and over	693	138	409	1,197	1,606	1,320	224
Not stated	—	—	—	—	—	—	1
Total	3,563	567	1,434	7,109	8,543	16,222	408
	Rate per 100,000 population						
0 - 14	5.6	—	1.4	10.0	11.4	49.0	..
15 - 24	11.0	0.4	2.1	19.1	21.2	85.1	..
25 - 44	18.1	2.6	5.7	38.4	44.2	74.9	..
45 - 64	24.6	6.3	12.3	53.7	66.0	93.0	..
65 and over	37.8	7.5	22.1	64.6	86.7	71.3	..
Total	16.1	2.6	6.4	31.9	38.3	72.7	..
ORIGIN ¹	Number						
Indian	468	83	203	889	1,092	1,343	..
Inuit	49	14	32	138	170	1,043	..
Other	3,046	470	1,199	6,082	7,281	13,836	..
Total	3,563	567	1,434	7,109	8,543	16,222	..
	Percentage distribution						
Indian	13	15	14	12	13	8	..
Inuit	1	2	2	2	2	7	..
Other	86	83	84	86	85	85	..
Total	100	100	100	100	100	100	..

¹This classification is shown to point up the high incidence of tuberculosis among the native population; Indians constituted 1.1% of the total population in 1961 and Inuit 0.1%.

5.18 Summary of new dialysis patients, by sex and age, 1973

Sex	Age group						
	Under 10	10-14	15-19	20-49	50 and over	Age not stated	All ages
	<i>Number of cases</i>						
Male	2	4	12	175	128	2	323
Female	—	9	14	120	64	1	208
Total	2	13	26	295	192	3	531
	<i>Rate per 1,000,000 population</i>						
Male	1.0	3.3	10.5	38.9	57.0	...	29.2
Female	—	7.9	12.8	27.1	25.4	...	18.8
Total	0.5	5.5	11.7	33.1	40.3	...	24.0

5.19 Psychiatric in-patient movement, by type of institution and sex, 1974P

Type of institution	Reporting institutions	Admissions ¹		Separations ²		Patients on books, Dec. 31, 1974 ³	
		Male	Female	Male	Female	Male	Female
Public mental hospital	43	20,678	13,728	21,729	14,670	14,337	10,359
Institution for the mentally retarded	82	3,265	2,231	3,492	2,486	11,470	8,748
Public psychiatric unit	117	22,893	34,249	22,835	34,218	1,343	1,920
Federal psychiatric unit	8	1,188	61	1,184	61	859	14
Psychiatric hospital	14	8,308	7,680	8,224	7,697	905	828
Aged and senile home	6	327	243	295	312	823	943
Hospital for addicts	16	7,279	1,781	7,259	1,776	313	82
Treatment centre for emotionally disturbed children	48	1,388	762	1,377	759	1,166	555
Epilepsy hospital	2	148	120	155	122	146	65
All institutions	336	65,474	60,855	66,550	62,101	31,362	23,514

¹Includes first admissions, readmissions and transfers-in.²Includes discharges, deaths and transfers-out.³Includes in addition to patients actually in residence those absent on probationary leave, boarding in approved homes, or otherwise absent from the institutions but not officially separated.**5.20 Average annual salaries¹ of nursing personnel in public hospitals, by academic qualifications, employment category and type of hospital, 1974**

Category	Average salary \$
ACADEMIC QUALIFICATIONS²	
Graduate nurse only	8,843
Clinical postgraduate training	9,613
University diploma — one year	9,666
Bachelor's degree in nursing	9,400
Master's degree in nursing	10,844
EMPLOYMENT CATEGORY³	
Nursing director	12,716
Director nursing education	12,419
Associate or assistant director nursing education	11,939
Nursing supervisor	11,433
Head nurse	10,689
Assistant head nurse	9,528
Teacher	10,211
General duty	
Registered	8,848
Not registered	7,935
TYPE OF PUBLIC HOSPITAL⁴	
General	8,843
Chronic/extended care	9,243
Mental	8,728
Tuberculosis	7,861
Children's	8,416
Convalescent/rehabilitation	9,579
Other	9,024

¹Excludes shift differential pay.²General-duty (registered) nurse — public general hospitals.³Graduate nurse without additional qualifications — public general hospitals.⁴General-duty (registered) nurse without additional qualifications.

5.21 Registered nurses by employment status and province of employment or residence¹, 1973

Province or territory of employment or residence	Employment status		Full-time or part-time not stated	Not employed in nursing	Not stated	Total
	Full-time	Part-time				
Newfoundland	1,257	163	330	277	23	2,050
Prince Edward Island	438	131	80	92	7	748
Nova Scotia	3,455	587	301	751	187	5,281
New Brunswick	2,350	607	260	1,007	95	4,319
Quebec	20,837	4,994	2,625	4,645	3,215	36,316
Ontario	33,191	10,721	1,944	24,882	770	71,508
Manitoba	3,746	1,114	396	951	53	6,260
Saskatchewan	3,680	1,187	737	724	31	6,359
Alberta	6,445	1,840	512	2,731	86	11,614
British Columbia	8,135	2,520	1,041	2,501	218	14,415
Yukon Territory and Northwest Territories	253	34	18	95	4	404
Canada	83,787	23,898	8,244	38,656	4,689	159,274

¹Location of residence is used for those nurses who are not employed, or whose employment status is unknown.

5.22 Average annual salaries of public health nurses, by academic qualifications, employment category and type of agency, 1973

Category	Average salary \$
ACADEMIC QUALIFICATIONS¹	
Registered nurse only	8,784
Registered nurse with public health certificate	9,904
Baccalaureate degree in nursing only	9,383
Baccalaureate degree and public health certificate	9,587
Baccalaureate degree major in public health	9,592 ²
Master's degree in nursing only	
Master's degree and public health certificate	9,956
Master's degree major in public health	11,251
EMPLOYMENT CATEGORY³	
Director	14,232
Assistant director (services)	12,816
Assistant director (education)	²
Consultant (generalized)	²
Consultant (specialized)	²
Supervisor	12,136
Assistant supervisor	10,627
Staff nurse (public health)	9,904
Staff nurse (registered nurse)	9,161
TYPE OF AGENCY⁴	
Department of National Health and Welfare	9,726
Department of National Defence	15,060
Provincial departments of health	10,053
Local/municipal/city departments of health	10,090
Local/county/regional departments of health	9,623
Local boards of education	9,686
Other public health agencies	9,298

¹Staff nurse (public health).

²Confidential — fewer than 3 individuals.

³Registered nurse with public health certificate.

⁴Staff nurse (public health) — registered nurse with public health certificate.

5.23 Physiotherapists by employment status and province of employment or residence¹, 1973

Province of employment or residence	Employment status		Employed in other than physiotherapy	Not employed	Not stated	Total
	Employed in physiotherapy					
	Self-employed	Salaried				
Newfoundland	1	51	—	2	2	56
Prince Edward Island	—	15	—	1	—	16
Nova Scotia	1	59	—	5	1	66
New Brunswick	—	45	—	2	—	47
Quebec	47	459	10	152	10	678
Ontario	87	1,330	8	132	72	1,629
Manitoba	5	144	1	13	—	163
Saskatchewan	6	97	—	12	—	115
Alberta	15	293	4	55	—	367
British Columbia	48	361	9	55	2	475
Not stated	—	1	—	1	—	2
Canada ²	210	2,855	32	430	87	3,614

¹Location of residence is used for those physiotherapists who are not employed, or whose employment status is unknown.

²Includes the Yukon Territory and Northwest Territories.

5.24 Radiological technicians by employment status and province of residence, 1972

Province or territory of residence	Employment status		Not employed	Not stated	Total
	Medical or health field	Other than medical or health field			
Newfoundland	106	7	13	1	127
Prince Edward Island	15	2	1	2	20
Nova Scotia	243	7	37	8	295
New Brunswick	122	5	33	3	163
Quebec	1,403	54	175	40	1,672
Ontario	1,788	67	329	20	2,204
Manitoba	306	7	74	13	400
Saskatchewan	209	10	61	7	287
Alberta	497	20	136	17	670
British Columbia	522	22	118	13	675
Yukon Territory	1	—	2	—	3
Northwest Territories	4	1	4	—	9
Canada	5,216	202	983	124	6,525

Sources

5.1 Health Economics and Statistics, Health Programs Branch, Department of National Health and Welfare.

5.2 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

5.3 - 5.24 Health Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

Chapter 6

Incomes and social security

This Chapter brings together material relating to the economic well-being of the Canadian people and their families. Summary statistics on the size and distribution of family incomes and expenditures are presented in Sections 6.1 and 6.2, federal and provincial social security programs are described in Sections 6.3 to 6.6 and veterans' services in Section 6.7.

Income data in Section 6.1 are those obtained in recent sample Surveys of Consumer Finances now conducted annually by Statistics Canada. A wide range of income statistics for families and individuals is also available in the reports of the 1971 Census of Canada, which are particularly useful for smaller geographical areas where annual sample surveys cannot provide reliable information at these levels. However, the income distributions of the Surveys of Consumer Finances at broad regional and provincial levels are shown in the tables of this Chapter since they are available for a later year (1973 data from the 1974 survey, rather than incomes for 1970 from the 1971 Census), and they can be compared with a number of earlier surveys for selected years over the past two decades.

Information on consumer spending is obtained through household surveys of family expenditure, as described in Section 6.2. Their primary use is to provide the basis of weighting in the construction of the consumer price indexes. The reader is referred to Chapter 21 for details on this important economic indicator.

6.1 Family incomes

Income distributions by size are a convenient statistical method for illustrating the capacity of families and individuals to exercise command over goods and services. Income statistics have many research and policy uses. They have been used, for example, by the Senate Committee on Aging in evaluating the adequacy of incomes of the older population, by the Economic Council in delineating the nature and characteristics of the poor, and by the Senate Committee on Poverty. Different government departments require these statistics to determine the need for social welfare measures as well as to evaluate and study the effects of existing and proposed measures on income distributions. Manufacturers, marketing agencies and others in the private sector make extensive use of income data to assist in estimating and projecting the demand for many types of goods and services.

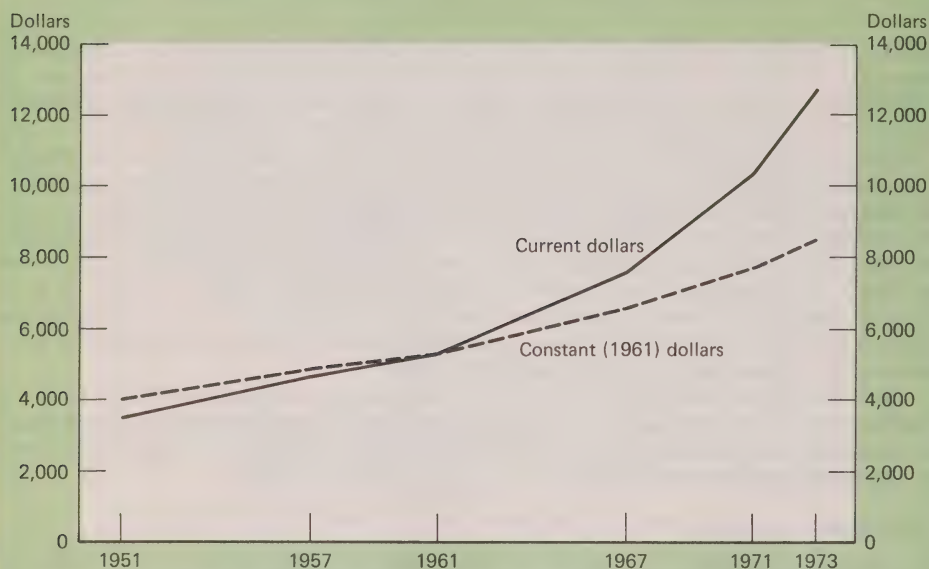
Statistics Canada conducted its first Survey of Consumer Finances in the spring of 1952. The survey was restricted to the non-farm population in the 10 provinces. Individuals in about 7,500 households were questioned on the size and source of their cash income in 1951. Following this initial experience the survey was conducted periodically, usually once every two years. The 1966 survey extended coverage to the farm population so that the survey sample became representative of practically all private households in Canada. The only continuing exceptions are the Yukon Territory and Northwest Territories and individuals living in institutional and collective dwellings such as military camps, hospitals and prisons. Since 1972, the Surveys of Consumer Finances have been conducted in the spring of each year. A more detailed description of the survey and a much wider selection of income distributions (including data for unattached individuals and for all income recipients individually), can be found in the annual report *Income distributions by size in Canada*, Statistics Canada Catalogue No. 13-207.

6.1.1 Family and income concepts

Due to the various meanings and interpretations that concepts such as "family", "unattached individuals", and "income" convey in different situations, these terms are defined here as they are employed in the annual Surveys of Consumer Finances.

Family. For the purposes of the survey, a family is defined as a group of individuals sharing a common dwelling unit and related by blood, marriage or adoption. This definition, often referred to as the "economic family" concept, is somewhat broader than that employed by most demographic studies and the census where a family is restricted to a married couple with or without unmarried children or a parent with unmarried children. Under the survey

Change in average family income, selected years, 1951-73
in current and constant (1961) dollars



definition all relatives in a household, regardless of the degree of relationship, constitute a family. This definition differs also from the "spending unit" concept of a family used in Family Expenditure Surveys described in Section 6.2.

Unattached individuals. The majority of people living in private dwellings are family members and the following income statistics describe the socio-economic position of these family groups. However, in 1973 an estimated 1.9 million individuals lived on their own or as roomers, boarders or employees in households where they were not related to anybody else; these persons were classified as unattached individuals and data on their incomes can be found in *Income distributions by size in Canada*, Catalogue No. 13-207.

Income. Survey estimates relate to money income received from all sources before payment of taxes and such deductions as pension contributions, insurance premiums, etc. This income may be composed of: wages and salaries; net income of the self-employed (e.g. partners in unincorporated businesses, professional practitioners and farmers); investment income (e.g. interest, dividends, and rents); transfer payments (e.g. old age pensions, family allowances); and other money income (e.g. retirement pensions, alimony). Thus the concept of income is similar to personal income in the national accounts except that, first, it covers only private households in the 10 provinces and not the non-commercial institutions such as churches and charitable organizations and, second, the survey estimates do not include imputed income such as the value of farm products produced and consumed at the farm. On the other hand, the survey income concept is broader than the income defined for the calculation of income tax since it includes such non-taxable money income as the guaranteed income supplement, pensions to the blind, etc.

6.1.2 Income trends, 1951-73

It is generally agreed that the levels of living of Canadians have been continuously improving over the years. Economic indicators, such as the rising levels of real incomes since

1951, support this contention. Tables 6.1 to 6.3 provide family income comparisons for the 1951-73 period; although the survey coverage excluded farm population until 1965 comparability with later years is not seriously affected in these tables.

The first set of figures in Table 6.1 gives average incomes in terms of current dollars in selected years from 1951 to 1973 for families (as defined in Section 6.1.1). Average family income was \$3,535 in 1951. This average increased by about 50% in the 1951-61 period to \$5,317 in 1961. It increased by 95% in the 1961-71 period and by about 23%, from \$10,368 to \$12,716, between the years 1971 and 1973. However, the purchasing power of the dollar has eroded during these years through increases in the prices of consumer goods. The second set of figures in Table 6.1 takes account of this factor by converting the income data into constant (1961) dollars. Thus it provides a better perspective to examine changes in incomes and shows that there has been a consistent improvement in real incomes over the years since 1951. The data also indicate that improvements in incomes were not restricted to any particular region but were experienced throughout the country. However, the rates of regional increases were such that, as shown in Table 6.2, the relative differentials between incomes in the five main regions tended to persist.

Table 6.3 shows how the size distributions of income, expressed in terms of constant (1961) dollars, have shifted since 1951. The median income of families has consistently moved up so that while 77% of all families received an income of less than \$5,000 in 1951, this proportion decreased to 52% in 1961 and to 26% in 1973. On the other hand, fewer than 3% of all families received an income of \$10,000 or more in 1951 but this proportion more than doubled by 1961 and had increased to 30% by 1973.

6.1.3 Major sources of income

The percentage distribution of families by major source of income within income quintiles is shown in Table 6.4 for selected years between 1951 and 1973. Data on income are quite informative when presented in a quintile arrangement. For this type of analysis families are arranged in an ascending order of the size of total income and divided into five equal groups or quintiles. The characteristics (e.g. major sources of income) of each of the five groups are then compared.

Table 6.4 shows that the major source of income of nearly half the families (48.2%) in the lowest income quintile in 1951 was wages and salaries. By 1973 only 35.5% of families in this group gave wages and salaries as their major source of income. In 1951 the main source of income of 26.6% of families in this quintile was government transfer payments; by 1973 this proportion had risen to 45.5%. At the other end of the scale, in the highest quintile for over four fifths of families (85.9%) in 1951 the major source of income was wages and salaries. By 1973 this percentage had risen to 90.0%, whereas the second-largest source of income for this group (net income from self-employment) declined from 11.6% to 7.8% over the period.

6.1.4 Provincial income distributions

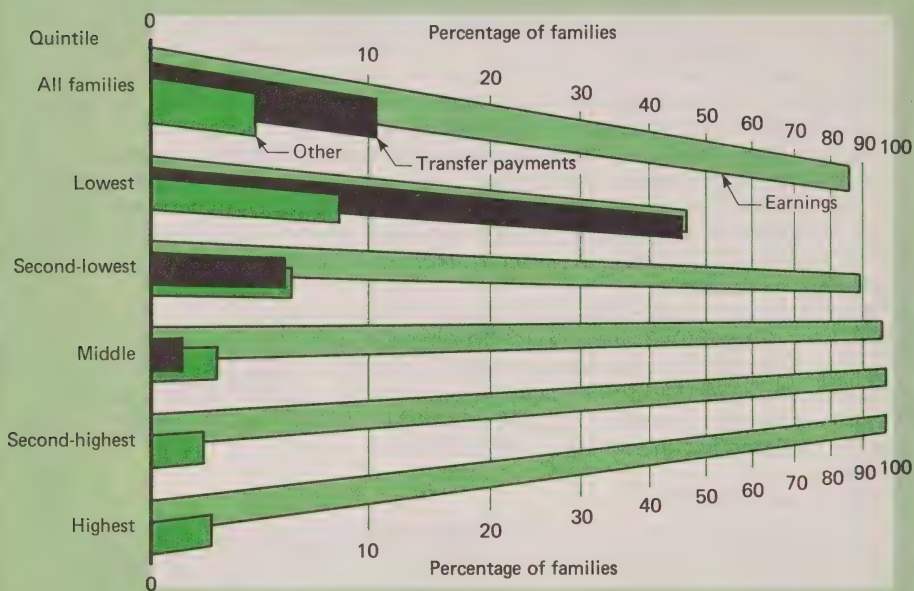
While family incomes in current (1973) dollars averaged \$12,716 in that year, Table 6.5 shows that at the provincial level they ranged from a low of \$8,572 for families in Prince Edward Island to a high of \$13,942 for families in British Columbia. Ontario families received on the average almost as much, \$13,912.

Family income distributions in 1973 showed almost 60% of more than 5.2 million Canadian families receiving incomes of \$10,000 or over. For Ontario, with approximately 2.0 million families, the corresponding figure was 61.9% and for British Columbia, with an estimated 576,000 families, it was 67.7%. At the other end of the scale only 31.3% of Prince Edward Island's roughly 23,000 families, and 37.1% of Newfoundland's 110,000 families, had incomes at this level.

6.1.5 Incomes by family characteristics

Distributions of family incomes are produced for a range of variables representing different income-influencing characteristics of the family or its head. These include such characteristics of the head as sex, age, marital status, employment status, occupation group, and education. Other family characteristics used for classifying incomes include tenure (whether owner or tenant), size of family, number of children, number and combinations of income recipients, and labour force participation of wife. While only three summary classifica-

Major source of family income within income quintiles, 1973



tions of family income are presented here relating to age and sex of head, education of head, and income recipients, data on all variables listed above may be found in the annual report *Income distributions by size in Canada*, Catalogue No. 13-207.

Incomes by age and sex of family head. Table 6.6 shows that family incomes averaged \$13,204 for families with male heads as compared to \$7,413 for about 9% of families which had female heads. The difference was most pronounced at the younger age levels and it gradually lessened with advancing age to the point where incomes of families with female heads 65 years of age and over averaged higher than those headed by males in the same age bracket.

Incomes of families with male heads increased at each successive age group to reach a peak at the 45-54 age range and then fell sharply at the 65-and-over age levels. From an average of \$9,979 for families with male heads under 25, family incomes rose to an average \$15,746 for those with heads 45 to 54 and dropped back to \$7,528 for those 70 years and over. Incomes of families with female heads showed a gradual rise from \$3,563 in the under-25 range to \$9,421 for the 55-64 group. Families whose female heads were 65 years of age and over received on the average \$8,927 in 1973.

Incomes by education of family head. Education of the family head is another factor which exerts a marked influence on family income. For example, Table 6.7 shows that the average family income in 1973 of families whose heads had a university degree was nearly two and a half times that of families whose heads had four years of schooling or less. The differences in income distributions underlying these averages are such that 87.6% of families whose heads had a degree showed incomes in 1973 of \$10,000 or more, and 23.4% attained \$25,000 or more. This compares with fewer than 33% reaching the \$10,000 mark and fewer than 3% the \$25,000 level for families whose heads had no more than four years of elementary education.

Recipients of family income. The family composition or economic activities of the family members are other factors that affect the size of family income. Table 6.8 provides a summary

picture of income distributions for several different combinations of income recipients within the family structure. The data are shown for (a) the major sub-category of families (husband-wife families), and (b) all other families. The latter include single-parent families and a residual group consisting of two or more related adults such as brothers and sisters.

Table 6.8 shows that the average income of husband-wife families with at least three income recipients (husband, wife and other relative) was \$18,305 as compared with only \$10,724 for husband-wife families in which the head was the only recipient. Other families (one-parent families and those of two or more related adults) had much lower average incomes ranging from \$10,386 for families with at least two income recipients (head and other family member) to \$5,223 for those in which the head was the only income recipient.

6.2 Family spending

Household surveys of family expenditure provide information on consumer spending that can be related to family characteristics such as geographic location, family size and income level. In general, the survey program has consisted of two phases: the collection, by means of monthly record-keeping surveys throughout the reference year, of detailed information on family food expenditures; and the collection of information by annual recall of all family expenditure, income and changes in assets and liabilities. The record-keeping phase was not featured in all the survey programs, and this has been particularly true of the more recent surveys.

A primary use of such surveys is to provide information for constructing, reviewing and revising the weights of the consumer price indexes (see Chapter 21). Initially these small-scale sample expenditure surveys carried out in selected Canadian urban centres since 1953 were designed to follow changes in the patterns of a well-defined group of middle-income urban families known as the “target group” of the consumer price index. In recent years the demand for expenditure statistics to serve other needs of government, business, welfare organizations and academic research has resulted in a widening in the scope and size of the surveys. This culminated in the expansion of the biennial program for 1969 to provide a large-scale national survey for the first time since 1948-49 covering both urban and rural households in the 10 provinces.

The most recent survey, the tenth in the series, was carried out in February and March 1973 and refers to the calendar year 1972 (see *Urban family expenditure, 1972*, Catalogue No. 62-541). While no restrictions on family composition or income were imposed, in order to produce data for individual cities of a more satisfactory nature, the main sample was concentrated in eight major urban centres rather than in 11 as in the 1964, 1967 and major urban centre part of the 1969 survey. For the 1972 survey the sample of 4,977 households was distributed in eight census metropolitan areas including city proper and fringe areas, namely St. John’s, Halifax, Montreal, Ottawa, Toronto, Winnipeg, Edmonton and Vancouver.

6.2.1 Family (spending unit) concept

The definition of a family or spending unit used in the family expenditure surveys is not the same as that of the census, or the “economic family” concept used in the Surveys of Consumer Finances (see Section 6.1.1). The family or spending unit is defined as a group of persons dependent on a common or pooled income for the major items of expense and living in the same dwelling or one financially independent individual living alone. Never-married sons or daughters living with their parents are considered as part of their parents’ spending unit. In the great majority of cases the members of spending units of two or more are related by blood, marriage or adoption, and are thus consistent with the “economic family” definition employed in surveys of family income, i.e. “a group of individuals sharing a common dwelling unit and related by blood, marriage or adoption”. However, it should be noted that according to the “economic family” definition, unrelated persons living in the same household would be counted as unattached individuals. Under the definitions in the expenditure survey, it is possible for two or more unrelated persons to comprise one family or spending unit.

6.2.2 Family expenditure patterns

In addition to trend comparisons it is useful to classify the expenditure patterns of families by a number of related variables (e.g. family income, size of family, sex and age of family head, and so on) to determine the influence and effects of these various factors on family spending habits. Such classifications are available in the report *Urban family expenditure, 1972* (Catalogue No. 62-541). This Section provides a brief trend comparison of expenditure patterns for 1969-72 and a classification of family expenditures in 1972 by income levels, the latter being the most influential of all factors bearing on most items of family spending.

Expenditure trends, 1969-72. While the average net income of survey families of two or more persons in eight Canadian cities rose from \$10,560 in 1969 to \$12,549 in 1972, Table 6.9 indicates that there were no significant shifts in the over-all expenditure patterns of these families during this period. The one possible exception arises from the foregoing increase in average incomes which resulted in personal income taxes forming 17.6% of total family expenditure in 1972 as compared to 15.6% in 1969. Food (17.1% in 1972), shelter (15.6%), clothing (7.4%), travel and transportation (12.1%) and other major items of expenditure were all within a fraction of 1% of the proportions which they consumed of the family budget in the earlier 1969 survey year.

Expenditure patterns by income, 1972. Table 6.10 shows the expenditure patterns in 1972 of survey families of two or more persons arranged by income quintiles (families ranked in ascending order of income size and then divided into five equal groups). For example, the average net income before taxes of the 20% of all families comprising the lowest quintile was \$5,035 as compared to an average of \$22,696 for the 20% of families forming the highest quintile.

As might be expected the percentages of total expenditure on specific items in the family budget showed some significant differences throughout the five income quintiles. The 20% of families in the lowest group spent on the average 47.2% of their total expenditures on food and shelter alone. The proportion ranged downward to only 26.9% for the 20% of families in the highest group. The latter group spent a slightly higher proportion of their total budget on such items as clothing, furnishings, travel and recreation. But the major offsetting difference was the amount for personal taxes which represented only 6.8% of total expenditures for families in the lowest group compared with 23.5% for those in the highest quintile. Evidence of the better financial position of families in the higher quintiles, despite their much larger tax expenditures, can be seen from the net change in assets and liabilities for 1972 which ranged from an average deficit of \$305 for families in the lowest quintile group to a gain of \$2,263 for those in the highest group. Other interesting differences in the characteristics of families over the low-to high-income ranges as shown in Table 6.10 were the following percentages: home-owners, from 34.2% of all families to 72.6%; car or truck ownership, from 43.6% to 89.3%; and wife employed full-time in the labour force, from 3.9% to 31.6%. It should be noted also that the successive income classes are not homogeneous as a group with respect to family size or number of full-time earners; average family size rose from 2.80 persons in the lowest class to 4.07 persons in the highest, and the number of full-time earners from 0.32 to 1.53 persons.

6.3 Federal social security programs

A wide range of income security and social service programs is provided by the federal, provincial and local governments. The publicly funded and administered programs are complemented by the activities of voluntary agencies.

Federal agencies in this field include the Unemployment Insurance Commission, the Department of Veterans Affairs, the Department of Indian Affairs and Northern Development, the Department of Manpower and Immigration and the Department of National Health and Welfare. The latter administers the Canada Pension Plan, the Old Age Security and Guaranteed Income Supplement, the Family Allowances, and the Canada Assistance Plan.

The National Council of Welfare, consisting of 21 private citizens, represents consumers and providers of welfare services and forms a link between citizens' groups and the Department of National Health and Welfare.

Since the spring of 1973 there has been a continuing federal-provincial review of Canada's social security system highlighted by meetings of federal and provincial welfare ministers. For the first meeting, held in April 1973, the Minister of National Health and Welfare

issued a Working Paper on Social Security in Canada. That meeting agreed to adopt five principal strategies as a basis for a reformed social security system. They deal with employment, social insurance, income supplementation, social services, and federal-provincial relations as they affect the nation's social security system. The Conference of Welfare Ministers also established a Continuing Committee on Social Security whose duty it is to direct the activities of three federal-provincial working parties on employment, social services and income maintenance. Five meetings of ministers have been held. At the most recent meeting in February 1975, the ministers directed the working parties to develop a policy framework which would provide for an "income support program" for some categories of unemployed persons, and a "work incentive measure" which ensures that those who work would always be better off than those receiving income support. The ministers also agreed that a "community employment strategy" was needed to provide employment for those who have difficulties in getting and keeping employment. Accordingly, 20 projects are being launched across Canada.

6.3.1 Canada Pension Plan

The Canada Pension Plan (CPP) is a compulsory, contributory, earnings-related pension plan that covers most employed members of the labour force between the ages of 18 and 65. It came into effect on May 5, 1965, started collecting contributions in January 1966, and paid its first benefits, namely retirement pensions, in January 1967. With the exception of Quebec where the Quebec Pension Plan is in effect (see Section 6.3.2) and where only certain groups contribute to the CPP (mainly federal employees), the Plan covers all of Canada. For the first 10 years the CPP is in a developmental stage; certain benefits reach their full levels only in January 1976.

Contributions are made by all employed members of the labour force aged 18 to 70 (subject to certain exceptions) and, for employees, amount to 1.8% of pensionable earnings (\$700 to \$7,400 in 1975) which is matched by the employers. Self-employed persons contribute 3.6%. The following types of benefits are payable.

A retirement pension amounts to 25% of a contributor's updated pensionable earnings averaged over the number of years contributions were made or, in the case of a person receiving a disability pension, averaged over the number of years contributions could have been made had the individual not been disabled.

Although a retirement pension is payable as early as the age of 65, persons between the ages of 65 and 69 who are employed can continue to contribute to the Plan in order to increase their future benefits. However, one cannot both draw a pension and continue to pay contributions.

Disability pensions are paid to contributors who, having contributed for at least five years, were determined to be suffering from a severe and prolonged mental or physical disability. This benefit, which begins to be paid three months after the person is determined to be disabled, consists of a fixed monthly amount (\$37.27 in 1975) and 75% of the contributor's retirement pension calculated as though the contributor had reached the age of 65 when the disability pension commenced.

Survivors' pensions are paid to the survivors of someone who, by 1975, has contributed to the Plan for at least four years. The full survivor's benefit is payable to: a disabled spouse; a spouse with dependent children; and a spouse 45 years of age or older. A partial survivor's pension is payable to a spouse between the ages of 35 and 45. The full survivor's pension for a spouse under the age of 65 includes a flat rate component (\$37.27 in 1975) and 37.5% of the contributor's retirement pension. When such a spouse reaches the age of 65, that pension changes to 60% of the deceased contributor's retirement pension.

Orphans' benefits are paid on behalf of unmarried, dependent children up to the age of 18, or 25 if the orphan continues to attend school or university full-time. Orphans' benefits are also payable to children of persons receiving a disability pension. The rate for each of the first four children equals the flat rate component of the survivor's pension, namely \$37.27 in 1975. For additional children, the rate for each one is one half this amount. However, each child receives the same amount because the total orphans' benefits for a family are divided equally among the children. An orphan may receive a benefit in respect of only one deceased contributor.

A lump-sum death benefit is equal to six times a contributor's monthly retirement pension up to a maximum of 10% of that year's maximum pensionable earnings (\$740 in 1975).

Canada Pension Plan benefits: number of beneficiaries, by type of benefit, March 1971-74



1. Total for each fiscal year.

The Canada and Quebec Pension Plans were introduced at the same time and were closely co-ordinated. However, recent amendments to both plans have produced some differences. For example, since 1973 the QPP paid higher benefits for disabled contributors and for surviving spouses. In January 1975 amendments to the Canada Pension Plan provided for: (1) equal treatment for male and female contributors and beneficiaries; (2) removal of the retirement and earnings test for persons aged 65 and over receiving the retirement pension; (3) fixing the rate at which the Year's Maximum Pensionable Earnings (YMPE) is to advance, i.e. it is to be increased each year by 12.5% until it is equal to Canada's industrial composite wage and salary (for the year 1975 the YMPE equals \$7,400); (4) changing the basic exemption level of pensionable earnings from 12% to 10% (but for 1975 this level was set at \$700); (5) self-employed members of the labour force who are members of a prescribed religious sect to be exempted from contributions (and benefits) by filing their intentions with the Department of National Revenue; and (6) a series of technical changes designed to improve the administration of the Plan, and further elaborating on the rights and procedures of appeal.

Since the beginning of 1974, CPP benefits are periodically adjusted to reflect cost of living increases. Excess funds collected by the Plan are made available to a province under a formula based on the ratio of contributions from that province to total contributions to the Plan.

An Advisory Committee, representing employers, employees, self-employed persons and the public, regularly reviews the operation of the Plan and reports to the Minister of National Health and Welfare. The Canada Pension Plan Act and Regulations authorize arrangements to be made with other countries to achieve portability of pensions. For further details on the year-to-year changes that have occurred to eligibility, exemptions, contributions and benefits, consult previous editions of the *Canada Year Book*. Summary statistics on the Canada Pension Plan appear in Tables 6.11, 6.12 and 6.13.

6.3.2 Quebec Pension Plan

The Quebec Pension Plan (QPP) was also established in 1965 and is virtually that province's counterpart to the Canada Pension Plan. Changes made to the QPP in 1973 and 1974 regarding contributions and benefits were not made to the CPP until January 1975. Yet, although the two plans are very similar, the following differences still exist: (1) The QPP continues to require that a person between the ages of 65 and 70 be retired from regular employment before a retirement pension is paid. Moreover, post-retirement earnings from part-time employment (beyond a certain limit) may reduce the monthly retirement pension. (2) The QPP's survivors' and disability benefits' flat rate component is \$95.56 compared to \$37.27 under the CPP (in 1975). (3) Since January 1974, the QPP's orphans' and children's benefits have been fixed at \$29 a month whereas those of the CPP are increased annually in accordance with the increases in the cost of living.

In 1973, 155,787 beneficiaries received close to \$100 million in benefits. The Quebec and Canada Pension Plans have established administrative arrangements to deal with dual contributors.

6.3.3 Old Age Security and Guaranteed Income Supplement

Under the Old Age Security Act of 1951 and its subsequent amendments, an OAS pension is payable to a person aged 65 and over provided the person has resided in Canada for 10 years immediately preceding the approval of an application for the pension. Any gaps in the 10-year period may be offset if the applicant has been present in Canada prior to that 10-year period after the age of 18 for periods of time equal to three times the length of the gaps. In this case, the applicant must also have resided in Canada for at least one year immediately preceding the month in which his application for pension may have been approved. The pension is also payable to persons aged 65 with 40 years of residence in Canada since age 18, no matter where they may live. A pensioner may absent himself from Canada and continue to receive payments with the following proviso: if he has lived in Canada for 20 years since his 18th birthday, payment outside Canada may continue indefinitely; if not, payment is continued for six months after the month of departure and is then suspended to be resumed only in the month in which he returns to Canada.

A 1966 amendment to the OAS Act provides for the payment of the Guaranteed Income Supplement (GIS). Pensioners with no other income may receive the maximum monthly Supplement; those with other income may receive a partial Supplement. The maximum GIS is

reduced by \$1 a month for every \$2 a month of income over and above the Old Age Security pension and any supplement that may have been received. Income for this purpose is the same as that computed in accordance with the Income Tax Act. In the case of a married couple, each is considered to have one half of their combined income. Where one spouse will not be receiving the Old Age Security pension at any time in the current year, six times the amount of the monthly OAS pension is deducted from one half of the combined income in calculating the income of the pensioner for purposes of determining the amount of the Supplement.

In January 1975 the OAS stood at \$120.06. For a single pensioner, or a married one whose spouse was not in receipt of the OAS, the maximum monthly GIS on the above date stood at \$84.21. For a married pensioner whose spouse was also in receipt of the OAS, the maximum monthly GIS for each stood at \$74.79. The OAS and maximum GIS are adjusted every quarter year to reflect increases in the consumer price index.

The Old Age Security program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital at which applications for pension are received. The regional office in Edmonton administers the program for residents of the Yukon Territory and the Northwest Territories. Summary statistics concerning the OAS and GIS programs appear in Table 6.14.

6.3.4 Family Allowances

6.3.4.1 The federal program

The Family Allowances Act, 1973, which came into effect on January 1, 1974, replaced the former Family Allowances Act of 1944 and the Youth Allowances Act of 1964. A description of these latter programs can be found in the *1973 Canada Year Book* pp 257 - 258.

Under the Act of 1973, a monthly Family Allowance is payable on behalf of a dependent child under 18 years of age who is resident in Canada and is maintained by a Canadian citizen or landed immigrant resident in Canada. In special cases the child or parent need not be resident in Canada, or the parent may be a non-immigrant admitted to Canada. The allowance is normally paid to the mother of the child. The Family Allowance is taxable and must be included as income by the person who claims the child as a dependent.

A monthly, non-taxable Special Allowance is payable on behalf of a child under the age of 18 who is in the care of, and maintained by, a government, a government agency, or an approved private institution. Although normally paid to the institution which has care of the child, the Special Allowance may be paid to the child's foster parent at the request of the institution.

Family and Special Allowances are increased at the beginning of each year whenever an index based on the consumer price index for Canada increases. The monthly Special Allowance was \$20 in 1974, and \$22.08 in 1975.

The Act permits a provincial legislature to specify the Family Allowance rates to be paid to families resident in the province provided that: (a) the rates are based only on the age of the child, the number of children in the family, or both; (b) no rate is less than 60% of the current federal rate; and (c) the total amount of Family Allowances paid in the province is, as far as practicable, the same as if the federal rates had been paid. Only Quebec and Alberta have specified their own rates. Provinces do not have the power to specify the Special Allowance rate.

Quebec specified the 1974 rates in the Quebec Family Allowances Plan of 1973 and, for 1975, in an Amendment to that Act passed in 1974, as follows:

Monthly Family Allowances in Quebec, 1974 and 1975 (dollars)

	0 - 11 years		12 - 17 years	
	1974	1975	1974	1975
First child	12.00	13.25	17.00	18.77
Second child	18.00	19.87	23.00	25.39
Third child	28.00	32.84	33.00	38.36
Each additional child	31.00	36.16	36.00	41.68

Alberta specified the 1974 rates in an Order in Council, dated December 19, 1973, which were subsequently incorporated in the Social Development Amendment Act, 1974. The rates for 1975 are specified in an Order in Council dated November 29, 1974.

Monthly Family Allowances in Alberta, 1974 and 1975 (dollars)

Age of child	1974	1975
0 - 6 years	15.00	16.40
7 - 11 years	19.00	20.80
12 - 15 years	25.00	27.30
16 - 17 years	28.00	30.60

Statistics on the operation of the Family Allowances program appear in Table 6.15. Statistics on the former Youth Allowances program paid on behalf of children 16 and 17 years of age appear in Table 6.16.

6.3.4.2 Provincial programs

Quebec has a provincial program embodied in the Quebec Family Allowances Plan of 1973. Under this Plan, certain criteria of eligibility differ somewhat from those of the federal program. In 1974 the province paid \$3 monthly for the first child in a family, \$4 for the second, \$5 for the third, and \$6 for each additional child; in 1975 these rates were \$3.31, \$4.42, \$5.52 and \$6.62 respectively.

Prince Edward Island passed a Family Allowances Act in 1973. Effective January 1, 1974 the province paid a \$10 monthly supplement on behalf of each child in the family beyond the fourth. For the year 1975, the same rate was in effect.

6.3.5 New Horizons Program

The New Horizons Program for retired Canadians was established by Order in Council and announced by the Minister of National Health and Welfare in July 1972. Primarily, the program was designed to alleviate the loneliness and sense of isolation which characterize the lives of many older people by offering them the opportunity to participate more actively in the life of the community. Grants are made available to groups of retired Canadians, consisting generally of no less than 10 members, for the purpose of planning and operating projects in which their talent and skills are to be utilized for their own betterment, that of other older persons, or of the community. Projects must be non-profit in nature and of no commercial benefit to others. New Horizons is not an employment program, that is, no money is allowed for salaries to the participants. Projects may be funded for up to 18 months. There is no fixed limit to the amount of a grant.

Projects funded to date include physical recreation; crafts and hobbies; historical, cultural and educational programs; social services; information services; and activity centres. As of February 12, 1975, 3,430 projects involving over 706,000 people have been awarded \$19,086,940. Table 6.17 presents the breakdown of projects funded in each province and territory by fiscal year.

6.3.6 Emergency Welfare Services

The function of the Emergency Welfare Services Division of the Department of National Health and Welfare is to develop and maintain community capability to provide the basic survival and emergency social services in any emergency in Canada. This consists primarily of five emergency services — lodging, feeding, clothing, registration and inquiry, and personal services.

A program has been developed and is being maintained so that, in a national emergency, the Division can co-ordinate the efforts of welfare departments at all levels of government as well as organizations, private social agencies, related professional groups, businesses and individual volunteers to allow for recovery from the given situation and to promote rehabilitation.

6.3.7 International welfare

Canada is actively involved in the social development activities of the United Nations. The Department of National Health and Welfare sits on the Executive Board of UNICEF and participates in the work of the Economic and Social Council and the General Assembly of the United Nations, and in those UN seminars and conferences dealing with social policy. The Department also works with the Organization for Economic Co-operation and Development on the development of social indicators, income transfer policy and the role of women in the economy.

The Department of National Health and Welfare, through the programs of the Canadian International Development Agency, provides advisers for service abroad and arranges for the training in Canada of foreign students and government officials, when recommended by their governments.

The federal department and provincial departments and agencies participate in the work of several international voluntary organizations including the International Council on Social Welfare and the International Union of Family Organizations. Informal discussions on the possibility of bilateral agreements in the sphere of social security have been held with the United Kingdom, Italy and the United States.

Canadian officials engaged in the field of social security participate in the work of the International Social Security Association and the social security program of the International Labour Organization. For some years, Canada has had observer status at meetings of the Inter-American Social Security Association.

6.4 Federal-provincial welfare programs

6.4.1 Canada Assistance Plan

The Canada Assistance Plan, 1966, was designed in consultation with the provinces as a comprehensive public assistance measure for supporting the integration and improvement of provincial and municipal assistance programs and encouraging the extension and development of welfare services which would lessen, remove or prevent the causes and effects of poverty, child neglect or dependence on public assistance. Under agreements with the provinces and territories, the federal government contributes 50% of sharable costs of provincial and municipal expenditures for public assistance and welfare services. Through the Plan, Canada also shares in the cost of work activity projects which are designed to improve the employability of persons who have unusual difficulty in finding or retaining jobs or in undertaking job training.

The only eligibility requirement specified under the Canada Assistance Plan for individuals or families applying for assistance under provincial programs is that of need, which is determined through an assessment of budgetary requirements as well as of income and resources. A province must not require previous residence to be a condition of eligibility for assistance. Rates of assistance and eligibility requirements are set by the province so that they may be adjusted to local conditions and the needs of special groups. The provinces are also required to establish procedures which enable individuals to appeal decisions relating to the provision of assistance.

Assistance includes any form of aid to, or on behalf of, persons in need of basic requirements such as food, shelter, clothing, fuel, household and personal necessities; special items necessary for the safety, well-being, or rehabilitation of a person in need; non-insured health care services; and maintenance in a home for special care such as a home for the aged, a nursing home or a child care institution.

Welfare services, which include counselling and assessment, casework, rehabilitation services, community development and day care, homemaker and adoption services, are provided to persons in need or to persons who are likely to become in need if they do not receive these services. The federal government also shares in the costs of administration of assistance and welfare services programs, such as salaries and employee benefits, and in the costs of staff training, research and consulting services which relate to welfare programs. These may be provided by provincial or municipal governments or by provincially approved non-profit agencies.

The number of recipients of financial aid under provincial social assistance programs is shown in Table 6.18. Federal payments under the Canada Assistance Plan amounted to \$824.8 million in the fiscal year 1973-74. This figure includes payments which were made to Quebec through the Department of Finance under the terms of the Established Programs (Interim Arrangements) Act (Table 6.19).

6.4.2 Allowances for blind and disabled persons

Under the Blind Persons Act, 1951, and the Disabled Persons Act, 1954, the federal government shares in the cost to the provinces of providing assistance to blind and disabled persons, aged 18 and over, who meet certain income and residence requirements. However,

most provinces have now ceased to accept applications for these allowances since, under the Canada Assistance Plan (see Section 6.4.1), provinces can provide a more comprehensive assistance program to all persons who are in need, without categorizing them according to the cause of their need, such as blindness or disability (Table 6.20).

6.4.3 National welfare grants

The National Welfare Grants program was established in 1962 to help develop and strengthen welfare services in Canada. Under the program, project grants are made to provincial and municipal welfare departments, non-governmental welfare agencies, citizens' organizations and universities. Fellowships are provided to individuals seeking advanced training in the social welfare field. The variety of provisions within the program, with its associated consultative services, allows it to operate as a flexible instrument in the development of welfare services and to give major emphasis to experimental activities in the welfare field. The allotment for the year ended March 31, 1975 was \$4 million.

A wide range of demonstration, research and social development projects are eligible for grants, as are developmental projects related to welfare manpower. Fellowships are available for study at Canadian and foreign universities.

Expenditures under the National Welfare Grants program for the year ended March 31, 1974 totalled \$2,932,702. A sum of \$1,591,600 was expended on demonstration projects; \$499,770 on research projects; \$454,560 on manpower utilization and development, including demonstration, curriculum review in schools of social work and fellowships; \$54,097 on general national agency projects; \$190,687 on special welfare projects including provincially administered bursary and staff development programs; and \$141,988 on mental retardation demonstration and research projects.

6.4.4 Vocational rehabilitation

Under the provisions of the Vocational Rehabilitation of Disabled Persons (VRDP) Act, the federal government contributes 50% of the costs incurred by a province in providing a comprehensive program for the vocational rehabilitation of physically and mentally disabled persons. A comprehensive program includes such services as medical, social and vocational assessment, counselling, restoration and placement services, the provision of prostheses, training, maintenance allowances and the provision of tools, books and other equipment. These services are provided directly by the provincial government or purchased from voluntary agencies. The disabled client participates in setting an employment objective for himself and in designing an appropriate program of services. His vocational goal may be employment in the competitive labour market, a profession, homemaking, farm work, sheltered employment or homebound work of a remunerative nature. Sharable costs also include the salary and necessary travelling costs of staff whose duties are directly related to this program and other administrative expenses necessary for the co-ordination and delivery of services to the disabled. (Other rehabilitation services provided by agencies and voluntary organizations may be funded by a province and are eligible for 50% reimbursement from the federal government under the Canada Assistance Plan.) All provinces and territories, except Quebec, participate in the VRDP program.

During the fiscal year 1973-74, the federal government contributed \$10,006,529 to the provinces under the Act and 25,494 clients received services.

6.4.5 Family planning

The Family Planning Division of the Department of National Health and Welfare was formed in January 1972 to provide a centre of responsibility for the federal family planning program. Its objective is to ensure, in co-operation with the provinces and territories, the accessibility and availability of family planning services to all Canadians who want them by: informing Canadians about the purpose and methods of family planning so that the exercise of free individual choice in this area will be based on adequate knowledge; promoting the training of health and welfare professionals and other staff involved in family planning services; aiding family planning programs operating under public or voluntary auspices through federal grants-in-aid and joint federal-provincial programs.

The Division's major program activities include consultation, information, training and the family planning grants. Consultation is provided to a broad range of government and non-

government organizations. Informative educational material on family planning, sex education and family life education is distributed free of charge. Canadian material on these subjects is currently being developed. To the extent that it is feasible, the Division's consultants assist in the training of professional health, welfare and educational staff and others working in the area of family planning.

Since the inception of the Family Planning Grants program in April 1972, a total of \$4.1 million has been provided for the support of innovative family planning services, demonstration, training and research projects and for university fellowships. Grant recipients have included provincial and municipal government departments, national and local voluntary family planning agencies, native community organizations and university departments.

6.5 Provincial welfare programs

Provincial departments of social services are responsible for the administration of welfare programs, although they may share their administration in certain fields with their municipalities (see Section 6.4).

Voluntary agencies whose interests include the welfare of families and children and of groups with special needs, such as the aged, recent immigrants, youth groups and released prisoners, complement provincial programs. Social planning councils contribute to the planning and co-ordination of local welfare services. Local voluntary agencies and institutions may receive public grants, depending on the nature and standard of their services, although their main support is usually from United Appeal funds or from sponsoring organizations.

6.5.1 Social assistance

All provinces make legislative provision for assistance to persons in need and their dependents. Need is determined by the budget deficit method, that is, the needs of the applicant and his dependents are calculated according to a prescribed schedule or budget in which specific amounts are allocated to various items of need. The difference between the amount needed, thus calculated, and the income available to meet that need is the budget deficit, or the amount of the allowance, subject to any ceilings which may be imposed.

In addition to allowances to cover items of basic need such as food, clothing, shelter, fuel and utilities, all provinces make provision for such special items as rehabilitation services, expenses incidental to education or to obtaining employment, counselling, homemaker services and institutional care. All provinces permit certain income or earnings exemptions and, under special circumstances, some provinces provide assistance to fully employed persons.

The provincial departments of welfare set rates of assistance and conditions of eligibility; they have regulatory and supervisory powers over municipal administration of assistance, and require certain standards as a condition of provincial aid. Municipal residence may determine the financially responsible authority within a province. The provincial authority takes responsibility for aid to persons residing outside municipal boundaries and for those who lack municipal residence.

The administration of assistance varies. In Nova Scotia, Ontario, Manitoba and Alberta, allowances to persons with long-term need, such as needy mothers with dependent children, disabled persons and the aged, are administered by the province, other allowances being administered by the municipalities. In Newfoundland, Prince Edward Island and New Brunswick, all assistance is administered by the provincial authority. In Quebec, the province administers assistance through regional and local offices, except in Montreal where the municipality administers assistance on behalf of the province. In Saskatchewan, social assistance is administered by the province except in two municipalities. In British Columbia, social allowances are administered through regional and district offices of the provincial government and, in some municipalities, by municipal departments of welfare.

In the seven provinces where the municipalities have some administrative responsibility, the proportion of the costs incurred by the municipality borne by the province varies from 40% to 100% of assistance paid.

6.5.2 Child welfare services

The term "child welfare services" refers particularly to statutory services for the protection and care of children who are neglected or who are temporarily or permanently

without parental care. These include protection for children in their own homes; care in foster boarding homes or, when necessary, in institutions; adoption services; and services to unmarried parents. Child welfare services are available in all provinces under provincial legislation.

The programs are administered by the provincial authority or by local children's aid societies (voluntary agencies with boards of directors operating under charter and under the general supervision of provincial departments). In Newfoundland, Prince Edward Island, New Brunswick, Saskatchewan and Alberta, child welfare services are administered by the province; in Quebec, they are administered by recognized voluntary agencies and institutions, religious and secular; in Ontario, a network of local children's aid societies is responsible for the services; in Nova Scotia and Manitoba, services are administered by local children's aid societies in the heavily populated areas and by the province elsewhere; in British Columbia, services are administered on a regional basis by the province, and in two cities by local welfare departments.

Children's aid societies and the recognized agencies in Quebec receive substantial provincial grants and sometimes municipal grants, and some receive support from private subscriptions or from United Appeal funds. The cost of certain services and maintenance costs for children in care of a voluntary or public agency are sharable with the federal government under the Canada Assistance Plan.

Day care services for children are operated under either voluntary or public auspices. A number of provinces make capital grants for the establishment of day care centres and provide operating subsidies.

6.5.3 Living accommodation for elderly persons

In all provinces, homes for the aged and infirm are provided under provincial, municipal or voluntary auspices. These homes are required to meet standards set out in provincial legislation relating to homes for the aged, welfare institutions or public health. Homes for the aged, regardless of auspices, are usually inspected and, in some provinces, must be licensed.

Small, proprietary boarding homes for the care of well, elderly persons are found in some provinces. Those who suffer from long-term illnesses may be cared for in chronic or convalescent hospitals, private or public nursing homes and some homes for the aged. Costs of care in the chronic or convalescent hospitals are paid through the provincial hospital plans. In the case of needy persons in the so-called homes for special care, maintenance costs are shared on a federal-provincial basis under the Canada Assistance Plan. Homes for special care include homes for the aged, hostels, lodges, nursing homes, etc. Various terms are used in the different provinces and within provinces.

In varying degrees, all provinces make capital grants toward the construction or renovation of homes for the aged by municipalities or voluntary organizations and, generally speaking, such homes are exempt from municipal taxation. Some provinces also make provision for capital grants to municipalities, charitable organizations or non-profit corporations for the construction of low-rental, self-contained and/or congregate living accommodation (homes for the aged, hostels, etc.) for older people. Independent living units for the aged may also be included in low-rental public housing projects for families.

6.6 Public expenditures on income security by all levels of government

Public expenditures on income security and welfare grants were \$10.3 billion in the fiscal year 1973-74. This represented 8.3% of gross national expenditures. Most federal expenditures were made in the following income maintenance programs: Family Allowances, Old Age Security and Guaranteed Income Supplement, Unemployment Insurance, Veterans' Pensions and Canada Pension and Quebec Pension schemes. The Canada Assistance Plan and provincial welfare programs, as well as outlays on a variety of research and development and special grants, made up the remainder of the expenditures.

6.7 Veterans' services

The Department of Veterans Affairs administers most of the legislation known collectively as the Veterans Charter and also provides administrative facilities for the Canadian

Pension Commission, which administers the Pension Act and Parts I to X of the Civilian War Pensions and Allowances Act; for the War Veterans Allowance Board, which administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act; and for the Secretary General (Canada) of the Commonwealth War Graves Commission.

The principal benefits now available to veterans are medical treatment for those eligible, land settlement and home construction assistance, education assistance for the children of the war dead, general welfare services, disability and dependents' pensions and war veterans allowances. The work of the Department, except the administration of the Veterans' Land Act, is carried out through 18 district offices and four sub-district offices in Canada; the benefits of the Veterans' Land Act are administered through five regional offices and 26 district offices across Canada.

6.7.1 Pensions and allowances

6.7.1.1 Disability and dependents' pensions

Canadian Pension Commission. The Canadian Pension Commission administers the Pension Act (RSC 1970, c.P-7) and Parts I to X of the Civilian War Pensions and Allowances Act (RSC 1970, c.C-20). Members are appointed by the Governor in Council who may also impose upon the Commission duties in respect of any grants in the nature of pensions, etc., made under any statute other than the Pension Act. It reports to Parliament through the Minister of Veterans Affairs. The Commission has district offices in principal cities across Canada with a Senior Pension Medical Examiner in charge.

The Pension Act. The evolution of Canada's pension legislation can be traced chronologically through special material usually appearing after major modifications in the laws affecting veterans' pensions and through the statistical presentations to be found each year in earlier editions of the *Canada Year Book*. The Pension Act was the subject of major modifications in 1971 and details of the principal changes are described in the *1972 Canada Year Book*.

The Pension Act provides for payment of pensions in respect of disability or death resulting from injury incurred during or attributable to service with the Canadian Forces in time of war or peace. Provision is also made for supplementing up to Canadian rates, awards of pension to or in respect of Canadians for disability or death suffered as a result of service in the British or Allied Forces during World War I or World War II or payment of pension at Canadian rates in cases where no pension has been awarded by the government of the country concerned.

In 1972 a Joint Study Group composed of representatives of veterans' organizations, the Canadian Pension Commission and the Department of Veterans Affairs was formed to study the basic rate of pension payable under Schedules A and B of the Pension Act in an exploratory way, so as to delineate the problem related to the establishment and periodic adjustment of an equitable basic rate and to recommend possible solutions. As a result of the work of the Study Group the basis of pension was established as the earning power of an unskilled labourer in the Public Service based on the average of an established composite group of five Public Service classifications. In July 1973 the acceptance of this basis brought about a 24% increase in pensions. This increase was followed by a 6.7% increase on January 1, 1974, based on the increase in the consumer price index for the 12-month period ending September 30, 1973. Thus the basic monthly pension for a single pensioner suffering 100% disability rose to \$418.26 with an additional pension of \$104.67 for a wife, \$54.42 for the first child, \$39.69 for a second child and \$31.37 for the third and each subsequent child. Pension awards to widows were increased to \$313.70 and additional payments for children or dependent brothers or sisters at the following rates: \$108.83 for one, \$188.22 for two and \$62.74 for a third or subsequent child or dependent brother or sister.

Details as to the number and type of pensions being paid under the Pension Act as at March 31, 1974 are given in Table 6.21.

6.7.1.2 War Veterans Allowances and Civilian War Allowances

War Veterans Allowance Board. The War Veterans Allowance Board is a quasi-judicial body consisting of eight members appointed by the Governor in Council. The Board administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act

and reports to Parliament through the Minister of Veterans Affairs. The Board acts as an appeal court for an applicant or recipient aggrieved by a decision of a District Authority and may, on its own motion, review and alter or reverse any adjudication of a District Authority. The Board is responsible for instructing and guiding the District Authorities in the interpretation of policy and for advising the Minister with respect to regulations concerning the administration of the Act.

War Veterans Allowance District Authorities. In 1950, 18 District Authorities were established in the regional districts of the Department of Veterans Affairs and granted full power to adjudicate on all matters arising under the War Veterans Allowance Act. In 1960, a separate authority — the Foreign Countries District Authority — was established to look after recipients living outside Canada. The members of a District Authority are employees of the Department of Veterans Affairs appointed by the Minister with the approval of the Governor in Council.

War Veterans Allowances. The War Veterans Allowance Act provides an allowance to otherwise qualified war veterans who, because of age or incapacity, are no longer able to derive their maintenance from employment and to ensure that their income does not fall below a specified level. Widows, widowers and orphans of qualified veterans are eligible for benefits. Since its inception in 1930, the Act has been amended on numerous occasions to meet additional needs of veterans and their dependents.

With effect from October 1, 1973, the WVA/CWA income levels are escalated by 5.3% and the rates by similar dollar amounts. The income levels are increased quarterly thereafter in accordance with the increase in the cost-of-living, except that orphans' income levels will continue to be adjusted annually.

As of April 1974, the rates for orphans were increased to \$125 a month for each orphan, less any amount payable under the Family Allowances Act, 1973, for that orphan. The income level was increased to \$135.95. Effective January 1, 1975, and on January 1 of each succeeding year, the income level will be increased in accordance with the rise in the cost-of-living. The rate will be increased by similar dollar amounts.

As of April 1, 1974, the allowance paid on behalf of a child of a widow, widower or unmarried veteran ("married" rate) or an allowance paid to an orphan is continued to age 25 as long as the child or orphan continues his education. The former legislation required payment of the "married" rate of orphan's allowance to cease at age 21; otherwise, the allowance paid on behalf of the child is discontinued at age 17.

With effect from October 1, 1974, the legislation provides for the payment of an additional \$50 a month (\$51.30 as of January 1, 1975), less Family Allowances in pay under the Family Allowances Act, 1973, for each dependent child of a widow, widower or unmarried veteran after the first one and for each dependent child of all other recipients.

As at November 30, 1974 a total of 82,431 persons were receiving War Veterans Allowances: 46,821 veterans, 35,272 widows and 338 orphans; of this total, only 631 resided outside Canada. The annual cost for all recipients was estimated at \$111.8 million.

Civilian War Pensions and Allowances. Part XI of the Civilian War Pensions and Allowances Act makes available to certain groups of civilians and their widows, widowers and orphans, benefits similar to those available to veterans under the War Veterans Allowance Act. These groups, which performed meritorious service in World War I and World War II, include: Canadian merchant seamen of both wars; non-Canadians who served in Canadian merchant ships in either war; Canadian voluntary aid detachments of World War I; Canadian firefighters of World War II; Canadian welfare workers of World War II; Canadian transatlantic aircrew of World War II; and the Newfoundland Overseas Forestry Unit of World War II.

As at November 30, 1974, a total of 3,946 civilians, including 937 widows and 12 orphans, were receiving these allowances; only four resided outside Canada. Total cost for the year was estimated at \$7.0 million.

6.7.1.3 Bureau of Pensions Advocates

The Bureau of Pensions Advocates was established under the Minister of Veterans Affairs by the amendments to the Pension Act 1971 (SC 1970-71, c.31), effective March 30, 1971. It succeeds the Veterans Bureau which had been in operation since 1930. The Bureau is

not part of the Department of Veterans Affairs, but provides an independent professional legal aid service to applicants for awards under the Pension Act. The Chief Pensions Advocate is the Chief Executive Officer and is assisted by pensions advocates, all of whom are lawyers, located at the Bureau's head office in Ottawa and in district offices in major centres across Canada. Pensions Advocates represent applicants as counsel at Entitlement Board and Pension Review Board hearings and provide a general counselling service to applicants relative to their claims under the Pension Act. No charge is made for the services of the Bureau.

During the fiscal year 1973-74 the Bureau of Pensions Advocates submitted 11,047 claims to adjudicating bodies. Of these, 7.1% related to World War I service, 70.7% related to World War II service, 3.1% to Special Force (Korea), 16.2% to Regular Force in peacetime, and 2.8% to Special Duty Area Service. Adjudication of disability claims for RCMP service and other service such as Reserve Force and Civilian War Service accounted for less than 1%. Of the 11,708 decisions rendered by adjudicating bodies on Bureau claims during this period, 35.4% were wholly or partially favourable to the applicant.

6.7.2 Welfare and treatment services

6.7.2.1 Welfare services

Welfare services for veterans and, where appropriate, their dependents, are provided by the Welfare Services Branch. These include the administration of assigned statutes; the conducting of field work and reporting for other branches of the Department, and the Canadian Pension Commission, the War Veterans Allowance Board and Services Benevolent Funds; and the provision of a rehabilitation and welfare program of advice and counselling including referral to other public or private agencies, veterans' organizations, etc.

Assistance Fund. Recipients of benefits under the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act living in Canada may be given help from the Assistance Fund if their total income is lower than the permitted maximum. Assistance may take the form of a monthly supplement based on shelter, fuel, food, clothing, personal care and specified health costs or of a single award to meet an unusual or emergency need. The number of persons assisted in the year ended March 31, 1974 was 24,089, the number in receipt of monthly supplements at the end of 1974 was 20,776 and fund expenditures from April 1, 1973 to March 31, 1974, amounted to \$9.8 million.

Education assistance to children. The Children of War Dead (Education Assistance) Act provides help in the form of allowances and the payment of fees for the post-secondary education of children of persons whose deaths have been attributed to military service. Assistance is restricted to children registered in educational institutions in Canada that require secondary school graduation, matriculation or equivalent standing for admission, including, in addition to universities and colleges, such facilities as hospital schools of teaching and institutes of technology. From its inception in July 1953 to March 31, 1974, expenditures totalled \$12.9 million of which \$7.2 million was spent in allowances and \$5.7 million in fees. By the end of March 1974, training had been approved for 6,982 children of Canada's war dead; of these, 2,947 had successfully completed training. At the same date, there were 863 students in university and non-university courses receiving assistance.

Veterans' insurance. Under the terms of the Returned Soldiers Insurance Act (SC 1920, c.54 as amended), any veteran of World War I became eligible to contract for life insurance with the federal government for a maximum of \$5,000. No policies have been issued under this Act since August 31, 1933. During the eight years in which the Act was open, 48,319 policies with a face value of \$109.3 million were issued. On December 31, 1974, 2,759 policies with a value of \$6.0 million were still in force.

The Veterans Insurance Act (RSC 1970, c.V-3) made life insurance up to a maximum of \$10,000 available to veterans of World War II on their discharge as well as to widows of those who died during that war. The Veterans Benefit Act of 1954 extended this eligibility to veterans with active service in Korea. The period of eligibility to apply for this insurance ended October 31, 1968. By that date 56,148 policies amounting to \$185.1 million had been issued and, of these, 19,730 policies with a value of \$63.0 million were still in force on December 31, 1974.

Rehabilitation and welfare. Welfare officers at district offices work closely with other branches of the Department, with other public agencies at all levels and with private agencies and organizations in assisting veterans and their dependents to deal with problems of social adjustment, particularly those associated with physical disabilities or the disabilities of increasing age. The latter occur more frequently, of course, as the age of the veteran population increases. A program of university, vocational, technical and home training with allowances, is provided for disabled pensioned veterans and vocational rehabilitation is also promoted by training assistance. Sheltered workshops at Toronto and Montreal and home assembly work in other centres produce poppies and memorial wreaths associated with Remembrance Day observances.

Services benevolent and welfare funds. Veterans and their dependents receive considerable assistance through various services benevolent funds. All of these organizations work closely together and in co-operation with the Department of Veterans Affairs and veterans' organizations. In addition to providing cash grants or loans as detailed below, all organizations for serving or ex-service personnel carry out increasingly heavy counselling work, particularly in the field of debt consolidation and management.

The oldest of the services funds, the Royal Canadian Navy Benevolent Fund, was incorporated in 1942 and derived its original capital from undistributed prize monies accrued during World War I. In the year ended March 31, 1974, it approved 290 applications for loans or grants totalling \$70,582. The Royal Canadian Air Force Benevolent Fund was established in 1944 using assets from disbanded units of the Commonwealth Air Training Plan. Loans or grants totalling \$271,794 were made in 926 cases during the year ended December 31, 1974. The Army Benevolent Fund was set up by Act of Parliament in 1947 and is administered by a Board appointed by the Governor in Council. It is the only one of the funds required to report annually to Parliament (through the Minister of Veterans Affairs). Capital for this Fund was derived from army canteen and mess funds accumulated during World War II. No provision was made in its charter for loan assistance and it is further restricted in that its operations extend only to persons who were on active service in the Canadian Army during World War II and their dependents. During the year ended March 31, 1974, 3,621 cases received \$417,864 in grants under its Veterans Welfare Programme.

In 1950 the Canadian Army Welfare Fund was incorporated to make assistance available to personnel (and their dependents) enlisting in the Army after World War II and who were thus ineligible for help under the three existing funds. While addressing itself primarily to the small-loan field for serving personnel, an amount of \$100,000 is set aside annually for distress grants. Following unification of the Forces, and because of a variety of legal complications precluding amalgamation of the existing funds, a fifth, the Canadian Forces Personnel Assistance Fund, was incorporated. Its primary role at the present time is in the field of small low-cost loans for serving personnel enlisting after February 1968. The grant and financial distress loan aspects of this program are expected to take on increasing importance as the years pass. Administration of the two last-named funds is carried out on contract through the office of the Army Benevolent Fund Board.

6.7.2.2 Treatment services

The Treatment Services Branch of the Department of Veterans Affairs provides medical and dental services for entitled veterans throughout Canada as well as for members of the Armed Forces, the Royal Canadian Mounted Police and the wards of other governments or departments at the request and expense of the authorities concerned. Prosthetic services are provided to entitled veterans by the Department of National Health and Welfare but paid for by the Department of Veterans Affairs (DVA).

The Branch provides examination and treatment for pensionable disabilities and provides treatment to war veterans allowance recipients (but not to their dependents) and veterans whose service and financial circumstances render them eligible for free treatment or at a cost adjusted to their ability to pay. If a bed is available, any veteran may receive treatment in a departmental hospital on a guarantee of payment of the cost of hospitalization. The pensioner receives treatment for his pensionable disabilities regardless of his place of residence but service to other veterans is available in Canada only. Subject to the approval of the

Department, an eligible veteran may also obtain treatment at the expense of the Department in an outside hospital from a doctor of his choice. Domiciliary care may be provided to eligible veterans in departmental facilities where the need for active or chronic treatment is sufficiently light, provided that excess beds are available.

Under the federal-provincial hospital insurance program, DVA hospitals are recognized for the provision of insured services to veterans. Where treatment is given for a non-pensioned condition at a DVA hospital to a veteran, or elsewhere to a veteran eligible under the veterans treatment regulations, the hospitalization is an insured service under the federal-provincial hospital insurance program and his medical care is an insured service under the federal-provincial medical care insurance program. The Department pays premiums where required on behalf of veterans who are eligible for war veterans allowances.

Hospital facilities. Treatment is provided in six active treatment hospitals located at Halifax, NS; Montreal and Sainte-Anne-de-Bellevue, Que.; London, Ont.; Winnipeg, Man.; and Calgary, Alta.; and in three domiciliary care homes at Ottawa, Ont., Saskatoon, Sask. and Edmonton, Alta. The number of beds set up in these institutions at December 31, 1974 was 3,880. It should also be noted that in Ottawa both acute and chronic cases requiring definitive treatment are admitted to the National Defence Medical Centre. A veterans' pavilion of 82 beds is located at St. John's General Hospital, St. John's, Nfld., 1,200 beds are available at Sunnybrook Hospital in Toronto, 150 beds at the Centre Hospitalier de l'Université Laval in Quebec and 200 beds at West Saint John Community Hospital in Saint John, NB, for the priority use of veterans, as well as some 766 beds in community hospitals located in St. John's, Nfld., Charlottetown, PEI, Kingston and Thunder Bay, Ont., Regina and Saskatoon, Sask. and Edmonton, Alta.

Medical staff and training programs. The active and consulting medical staffs of departmental hospitals are usually private practitioners and specialists who also hold teaching appointments on the medical faculties of local universities. Their appointment and selection is normally recommended by the Deans of Medicine of the universities with which the departmental hospitals are affiliated. This affiliation results in approval by the Royal College of Physicians and Surgeons of Canada for postgraduate teaching in resident teaching programs of non-core years in medicine, surgery, psychiatry and other specialties. Some departmental hospitals are also affiliated with technical schools and act as hospital teaching units in technical school programs for paramedical sciences such as laboratory and radiology technicians. In addition, residency training programs are given in psychology, dietetics, physiotherapy and occupational therapy, and in the medical social services at both the undergraduate and graduate levels. A postgraduate residency program in hospital pharmacology and pharmacy methodology is conducted at Westminster Hospital, London, Ont. At Camp Hill Hospital in Halifax, Deer Lodge in Winnipeg and Westminster Hospital in London, the Department is affiliated with the university medical school in the undergraduate clinical teaching program, in addition to participating in graduate residency training.

6.7.3 Land settlement and house construction

The Veterans' Land Act, 1942, as amended, provides financial, technical and supervisory assistance to World War II and Korean Force veterans, to enable them to engage in agriculture or commercial fishing on a full-time basis; to acquire, build or improve homes; and to settle on provincial, federal and Indian reserve land. Loans may be made up to \$40,000 for full-time farmers on economic farm units, to \$18,000 for small family farmers, to \$16,000 for small holders (part-time farmers) and to \$18,000 for veterans building houses on city-sized lots.

From inception of the Act to December 31, 1974, 138,279 veterans were settled under the provisions of the Act; 31,584 were established as full-time farmers, 93,432 as small holders, 5,702 as Crown land settlers, 1,438 as commercial fishermen; 1,783 Indian veterans were established on reservations and 4,340 veterans acted as their own contractors in building homes on city-sized lots. Subsequent to settlement, 20,340 farmers and 22,159 small holders and commercial fishermen were given additional loans. In 1974, loans amounting to over \$75,567,116 were approved on behalf of 4,979 veterans. From inception of operations to the end of 1974, almost \$1.3 billion was spent on repayable loans, advances and non-repayable grants and 72,559 veterans had earned conditional grants of \$128.6 million. By the end of that year, 60,573 of them had successfully completed their settlement contracts — 19,208 farmers,

34,144 small holders, 763 commercial fishermen, 4,794 Crown land settlers, and 1,664 Indian veterans on reservations.

Field officers, highly trained in techniques pertaining to agriculture, construction and land appraisals provide advisory, supervisory and appraisal services. During 1974, 5,904 properties were appraised, including 292 under the Indian Off-Reserve and Eskimo Housing Program and 17 special assignments carried out on behalf of other government departments and agencies. Altogether, 667 new homes were started — 656 for small holders and commercial fishermen, 11 farm homes — and 583 new houses were completed.

During the fiscal year 1973-74, instalments falling due on properties purchased by veterans under the Act amounted to \$40.9 million, excluding share-of-crop payments; over 96.4% of the total amount due was collected and 581 veterans under share-of-crop agreements paid almost \$1.9 million. By December 31, 1974, 20,618 veterans were insured under the Veterans' Land Act Group Life Insurance for almost \$212.9 million. Since inception of the group plan, 564 insured veterans died and \$4.2 million was paid to retire their indebtedness.

6.7.4 Commonwealth War Graves Commission

The current Charters of the Commonwealth War Graves Commission consist of two documents — the Original Charter of Incorporation dated May 21, 1917, and the new Supplemental Charter dated June 8, 1964. Under these Charters the Commission is entrusted with the marking and maintenance in perpetuity of the graves of those of the British Empire and Commonwealth Armed Forces who lost their lives between August 4, 1914, and August 31, 1921, and between September 3, 1939, and December 31, 1947, and with the erection of memorials to commemorate those with no known grave.

The Canadian High Commissioner in London, England, is the official Commission member for Canada and the Minister of Veterans Affairs is the Agent of the Commission in Canada. The office of the Secretary-General of the Canadian Agency is in the Veterans Affairs Building, Ottawa.

Sources

- 6.1 - 6.2 Consumer Income and Expenditure Division, Household Statistics Branch, Statistics Canada.
- 6.3 - 6.6 Program Information and Documentation Division, Policy and Program Development and Coordination Branch, Welfare, Department of National Health and Welfare.
- 6.7 Public Relations, Department of Veterans Affairs.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

6.1 Average income of families in current and constant dollars by region, selected years, 1951-73

Region	1951	1957	1961	1967	1971	1973
<i>Current dollars</i>						
Atlantic provinces	2,515	3,422	4,156	5,767	7,936	9,965
Quebec	3,523	4,517	5,294	7,404	9,919	12,024
Ontario	3,903	4,997	5,773	8,438	11,483	13,912
Prairie provinces	3,261	4,355	4,836	6,908	9,309	11,760
British Columbia	3,669	5,238	5,491	7,829	11,212	13,942
Canada	3,535	4,644	5,317	7,602	10,368	12,716
<i>Constant (1961) dollars</i>						
Atlantic provinces	2,858	3,629	4,156	4,997	5,949	6,627
Quebec	4,003	4,790	5,294	6,416	7,436	7,996
Ontario	4,435	5,299	5,773	7,312	8,608	9,251
Prairie provinces	3,706	4,618	4,836	5,986	6,978	7,820
British Columbia	4,169	5,555	5,491	6,784	8,405	9,271
Canada	4,016	4,922	5,317	6,591	7,776	8,456

6.2 Average income of families in each region as a percentage of the average for Canada, 1951, 1961, 1971 and 1973

Region	1951	1961	1971	1973
Atlantic provinces	71.1	78.2	76.5	78.4
Quebec	99.7	99.6	95.7	94.6
Ontario	110.4	108.6	110.8	109.4
Prairie provinces	92.2	91.0	89.8	92.5
British Columbia	103.8	103.3	108.1	109.6
Canada	100.0	100.0	100.0	100.0

6.3 Percentage distribution of families in constant (1961) dollars, showing average and median incomes, selected years, 1951-73

Income group in constant (1961) dollars	1951	1957	1961	1967	1971	1973
Under \$1,000	6.3	3.6	3.3	2.2	2.6	1.7
\$ 1,000-\$1,999	12.5	10.2	7.9	5.4	4.7	3.5
2,000- 2,999	19.2	13.0	10.8	8.8	7.9	6.6
3,000- 3,999	23.2	16.7	13.7	9.8	7.2	6.9
4,000- 4,999	16.2	17.5	16.6	11.7	8.1	7.1
5,000- 5,999	8.4	13.1	15.0	13.0	9.0	8.7
6,000- 6,999	5.4	8.4	11.3	11.9	10.4	9.5
7,000- 9,999	6.0	12.2	14.9	22.7	26.3	25.7
10,000 and over	2.8	5.3	6.5	14.5	23.8	30.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Average income	\$ 4,016	4,922	5,317	6,591	7,776	8,456
Median income	\$ 3,517	4,371	4,866	5,936	7,005	7,660

Median income refers to the middle or central value when incomes are ranged in order of magnitude. Median income is lower than average income in these tables since it is not as affected by a few abnormally large values in the distribution.

6.4 Percentage distribution of families by major source of income within income quintiles, selected years, 1951-73

Major source of income within quintiles ¹	1951	1957	1961	1967	1971	1973
Lowest quintile						
No income ²	2.0	2.5	2.4	1.6	1.6	1.1
Wages and salaries	48.2	49.2	46.3	36.3	33.6	35.5
Net income from self-employment	10.5	10.9	9.1	19.2	11.8	10.6
Transfer payments	26.6	30.9	34.6	35.9	46.2	45.5
Investment income	7.0	3.2	3.4	3.0	3.3	3.2
Miscellaneous income	5.7	3.1	4.2	4.1	3.4	4.0
Second-lowest quintile						
Wages and salaries	85.5	85.5	83.5	80.8	81.0	80.8
Net income from self-employment	10.7	9.7	11.6	10.0	7.6	7.9
Transfer payments	1.1	2.3	1.8	4.1	4.9	5.5
Investment income	1.7	0.9	1.0	2.1	2.6	2.8
Miscellaneous income	1.0	1.6	2.0	3.0	3.9	3.0

6.4 Percentage distribution of families by major source of income within income quintiles, selected years, 1951-73 (concluded)

Major source of income within quintiles ¹	1951	1957	1961	1967	1971	1973
Middle quintile						
Wages and salaries	91.8	91.6	91.3	92.0	93.1	91.3
Net income from self-employment	7.2	7.5	7.0	6.0	3.9	5.2
Transfer payments	0.3	0.2	0.3	0.7	0.3	1.1
Investment income	0.5	0.5	1.0	0.7	1.3	1.1
Miscellaneous income	0.2	0.1	0.5	0.7	1.4	1.3
Second-highest quintile						
Wages and salaries	92.4	92.0	92.1	93.8	94.7	93.9
Net income from self-employment	6.9	6.7	6.2	4.5	2.8	3.9
Transfer payments	--	0.4	0.1	0.3	0.2	0.3
Investment income	0.5	0.4	1.2	0.8	1.4	1.3
Miscellaneous income	0.3	0.6	0.5	0.6	0.9	0.7
Highest quintile						
Wages and salaries	85.9	84.6	86.8	89.1	91.2	90.0
Net income from self-employment	11.6	13.1	10.9	8.9	5.6	7.8
Transfer payments	--	--	--	--	0.1	--
Investment income	2.1	1.9	1.7	1.8	2.1	1.8
Miscellaneous income	0.4	0.4	0.6	0.2	0.9	0.3
All families						
No income ²	0.4	0.5	0.5	0.3	0.3	0.2
Wages and salaries	80.8	80.7	80.0	78.4	78.7	78.3
Net income from self-employment	9.4	9.6	9.0	9.7	6.3	7.1
Transfer payments	5.6	6.7	7.3	8.2	10.3	10.5
Investment income	2.3	1.4	1.7	1.7	2.2	2.0
Miscellaneous income	1.5	1.2	1.6	1.7	2.1	1.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

¹Families are arranged in ascending order of size of total income and then divided into five equal groups, or quintiles.²These are families who either immigrated in the survey year so that they had no income from Canadian sources in the previous year or were formed during the survey year and had no cash income of their own in the previous year.**6.5 Percentage distribution of families by income group, by province, 1973**

Income group	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Canada
Under \$1,000	1.6	1.6	0.9	1.4	0.8	1.1	1.0	1.5	1.5	1.5	1.1
\$ 1,000 - \$ 1,999	1.8	2.3	1.7	2.3	1.1	1.1	1.9	2.4	1.4	0.6	1.2
2,000 - 2,999	4.8	3.7	3.8	3.9	3.0	2.1	3.6	4.7	3.3	1.9	2.7
3,000 - 3,999	6.5	8.3	5.3	5.4	4.0	3.2	5.6	6.1	4.6	2.7	3.9
4,000 - 4,999	7.7	10.2	7.3	6.3	5.7	3.6	5.4	6.8	5.5	4.3	4.9
5,000 - 5,999	7.4	8.2	6.0	7.0	5.7	3.2	5.8	5.5	4.5	3.9	4.6
6,000 - 6,999	8.3	11.3	7.4	7.9	5.4	3.3	5.6	6.0	4.6	3.1	4.6
7,000 - 7,999	8.3	10.2	9.2	8.5	6.2	4.2	5.4	6.2	4.6	3.6	5.3
8,000 - 8,999	9.2	4.5	7.2	8.0	6.9	4.9	6.9	6.9	6.4	4.5	5.9
9,000 - 9,999	7.3	8.4	7.2	7.9	6.5	5.2	5.9	6.5	6.3	6.2	6.0
10,000 - 11,999	11.0	14.1	11.6	12.0	13.2	12.4	12.3	11.7	11.9	12.5	12.5
12,000 - 14,999	11.5	9.1	13.3	14.0	15.4	18.6	16.0	13.7	14.8	18.9	16.7
15,000 - 24,999	12.5	5.3	16.1	13.7	21.0	29.3	21.5	17.8	24.6	29.6	24.6
25,000 and over	2.1	2.8	2.9	1.7	5.1	7.6	3.2	4.3	6.1	6.7	5.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average income \$	9,400	8,572	10,575	9,873	12,024	13,912	11,389	11,032	12,405	13,942	12,716
Median income \$	8,387	7,433	9,164	8,914	10,704	12,816	10,447	9,602	11,206	12,826	11,532
Sample size	No.	1,174	258	1,872	1,475	4,247	5,568	1,131	1,123	1,596	2,052
Estimated families	'000	110	23	178	150	1,408	1,952	236	216	380	576
											5,229

6.6 Percentage distribution of families by income group, age and sex of head, 1973

Income group	Age group							Total
	Under 25	25-34	35-44	45-54	55-64	65-69	70 and over	
Families with male heads								
Under \$1,000	1.9	0.8	0.5	0.7	1.1	0.8	- -	0.8
\$ 1,000 - \$ 1,999	1.0	0.5	0.5	0.6	1.6	3.0	1.6	0.9
2,000 - 2,999	1.6	0.8	0.8	0.9	2.8	9.3	9.1	2.2
3,000 - 3,999	2.7	1.4	1.0	1.7	4.1	7.8	16.1	3.2
4,000 - 4,999	3.8	2.1	2.4	2.2	4.1	10.9	21.4	4.3
5,000 - 5,999	5.2	3.7	2.8	2.4	4.4	7.9	12.3	4.2
6,000 - 6,999	7.6	3.9	3.8	3.2	4.4	8.3	6.0	4.4
7,000 - 7,999	8.6	5.3	4.4	3.6	5.3	6.9	6.8	5.1
8,000 - 8,999	10.3	6.4	5.6	4.3	5.9	6.7	4.8	5.9
9,000 - 9,999	8.4	7.2	6.0	5.4	6.1	5.2	3.4	6.1

6.6 Percentage distribution of families by income group, age and sex of head, 1973 (concluded)

Income group	Age group							Total
	Under 25	25-34	35-44	45-54	55-64	65-69	70 and over	
Families with male heads (concluded)								
\$10,000 - \$11,999	19.3	16.4	12.7	11.8	11.2	9.3	4.4	12.9
12,000 - 14,999	17.4	22.0	19.9	17.0	15.9	8.6	5.2	17.5
15,000 - 24,999	11.8	26.1	31.9	35.0	25.2	11.7	6.0	26.1
25,000 and over	0.3	3.4	7.7	11.1	7.9	3.5	3.0	6.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average income \$	9,979	12,884	14,617	15,746	13,399	9,127	7,528	13,204
Median income \$	9,855	12,172	13,384	14,321	11,820	7,298	5,150	12,001
Sample size No.	1,145	4,416	4,088	3,694	2,907	1,083	1,467	18,800
Estimated families '000	292	1,149	1,100	967	709	252	320	4,789
Families with female heads								
Under \$1,000	14.8	9.7	4.7	1.9	3.6	--	--	4.7
\$ 1,000 - \$ 1,999	17.8	6.6	3.9	2.2	3.6	2.9	--	4.7
2,000 - 2,999	18.3	13.7	6.8	7.8	6.1	5.9	--	8.8
3,000 - 3,999	16.9	16.7	12.6	7.7	10.6	11.6	--	12.1
4,000 - 4,999	12.6	12.8	15.0	10.3	5.8	10.8	--	11.3
5,000 - 5,999	4.4	10.3	11.1	7.4	7.4	6.8	--	8.3
6,000 - 6,999	5.8	5.7	9.3	6.6	4.7	6.4	--	6.6
7,000 - 7,999	2.8	5.6	8.0	8.4	6.5	6.3	--	6.8
8,000 - 8,999	0.9	6.4	6.2	7.1	6.3	10.0	--	6.8
9,000 - 9,999	0.7	3.8	4.3	7.4	5.4	4.1	--	4.8
10,000 - 11,999	--	5.3	5.5	11.5	13.1	11.3	--	8.6
12,000 - 14,999	3.7	2.4	7.5	7.6	11.2	12.2	--	7.7
15,000 - 24,999	1.2	1.1	5.1	12.7	11.6	10.7	--	7.7
25,000 and over	--	--	--	1.4	4.1	1.0	--	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	--	100.0
Average income \$	3,563	4,944	6,592	8,839	9,421	8,927	--	7,413
Median income \$	2,947	4,267	5,632	7,728	8,275	7,891	--	6,006
Sample size No.	109	289	314	357	262	365	--	1,696
Estimated families '000	30	82	86	98	62	82	--	440

6.7 Percentage distribution of families by income group and education of head, 1973

Income group	Elementary schooling		Secondary schooling		Post-secondary (non-university)		University	
	0-4 years	5-8 years	Some	Completed	Some	Completed	Some	Degree
Under \$1,000	0.7	1.1	1.4	1.2	1.0	0.7	0.5	0.7
\$ 1,000 - \$ 1,999	3.1	1.6	1.1	1.1	1.0	0.4	0.8	0.4
2,000 - 2,999	8.9	4.4	2.2	1.1	0.8	0.7	1.9	0.5
3,000 - 3,999	11.5	5.7	3.8	1.6	2.1	1.8	1.5	0.7
4,000 - 4,999	12.9	8.2	4.1	2.1	3.0	1.9	2.3	1.2
5,000 - 5,999	8.2	6.8	4.4	3.2	2.6	2.9	1.9	1.2
6,000 - 6,999	6.4	6.6	4.6	3.7	3.0	3.1	2.0	1.4
7,000 - 7,999	5.1	7.0	5.8	4.2	4.9	3.9	3.5	1.7
8,000 - 8,999	5.8	7.4	6.5	5.0	6.1	6.0	4.1	1.9
9,000 - 9,999	5.1	6.4	7.1	5.9	7.0	6.4	3.5	2.7
10,000 - 11,999	9.0	11.8	13.9	13.5	14.9	14.7	13.2	7.3
12,000 - 14,999	10.0	13.2	19.0	19.9	17.7	21.2	18.6	13.4
15,000 - 24,999	10.6	16.7	22.7	31.2	31.0	29.2	36.3	43.5
25,000 and over	2.6	3.2	3.5	6.3	5.0	7.2	9.8	23.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average income \$	8,669	10,426	11,965	13,970	13,511	14,213	15,704	20,933
Median income \$	6,716	9,193	11,279	13,115	12,572	12,986	14,422	18,407
Sample size No.	1,528	6,017	5,981	2,974	459	1,161	1,008	1,368
Estimated families '000	307	1,439	1,533	830	132	309	287	392

6.8 Percentage distribution of families¹ by income group, family type, and combination of income recipients, Canada, 1973

Income group	Income recipient ²				
	Husband-wife families			All other families	
	Head only	Head and wife only	Head, wife, and other family members ³	Head only	Head and other family members ³
Under \$1,000	1.1	0.3	0.2	8.8	0.3
\$ 1,000 - \$ 1,999	2.0	0.4	--	8.6	1.3
2,000 - 2,999	3.4	2.3	0.1	15.7	3.2
3,000 - 3,999	4.2	3.7	0.6	16.4	7.1
4,000 - 4,999	5.2	5.4	0.9	13.8	8.5
5,000 - 5,999	6.1	4.0	1.4	7.4	8.2
6,000 - 6,999	6.4	3.9	2.0	6.3	6.2
7,000 - 7,999	7.4	4.7	2.4	4.8	7.8

6.8 Percentage distribution of families¹ by income group, family type, and combination of income recipients, Canada, 1973 (concluded)

Income group	Income recipient ²				
	Husband-wife families			All other families	
	Head only	Head and wife only	Head, wife, and other family members ³	Head only	Head and other family members ³
\$ 8,000 - \$ 8,999	8.3	5.6	2.4	3.8	8.0
9,000 - 9,999	8.6	5.5	3.6	3.7	6.2
10,000 - 11,999	15.3	13.2	7.6	5.0	12.1
12,000 - 14,999	15.9	19.1	17.3	3.9	13.2
15,000 - 24,999	13.1	27.0	45.6	1.3	14.8
25,000 and over	3.1	4.7	16.1	0.5	3.2
Total	100.0	100.0	100.0	100.0	100.0
Average income	\$ 10,724	12,872	18,305	5,223	10,386
Median income	\$ 9,702	12,126	17,037	4,046	8,932
Sample size	No. 5,796	7,502	2,578	747	1,420
Estimated families	'000 1,433	1,963	678	203	357

¹Excludes 11,700 families who received no cash income in 1973 (see footnote 2 to Table 6.4).

²Data not shown for income recipient group "Other than head only" due to the small number of cases in the sample.

³"Other family members" refers to any income of children or other relatives.

6.9 Patterns of expenditure for families of two or more persons, based on surveys of eight Canadian cities, 1969 and 1972

Item		1969	1972	Item	1969	1972
Family characteristics				Percentage of total		
Average				expenditure (concluded)		
Family size	No.	3.63	3.48	Household operation	4.1	3.7
Children under 5	"	0.34	0.30	Furnishings and equipment	4.6	4.6
Children 5-15	"	0.91	0.79	Household appliances	1.0	1.0
Children 16-17	"	0.14	0.14	Other	3.6	3.6
Adults 18-64	"	2.09	2.10	Clothing	8.1	7.4
Adults 65 and over	"	0.21	0.21	Personal care	2.1	1.9
Full-time earners	"	1.01	1.00	Medical and health care	3.2	2.6
Age of head	yr	44.0	44.1	Smoking and alcoholic beverages	3.6	3.7
Net income before taxes	\$	10,560	12,549	Travel and transportation	12.2	12.1
Other money receipts	\$	216	246	Automobile (and truck)	9.6	9.5
Net change in assets and liabilities	\$	332	571	Purchase	4.4	4.3
Percentage				Operation	5.2	5.1
Home-owners		55.0	53.9	Other	2.5	2.6
Car or truck owners		77.9	75.6	Recreation	3.5	3.6
Wife employed full-time		16.4	18.4	Reading	0.6	0.6
				Education	1.0	1.0
				Miscellaneous expenses	1.4	1.8
Average total expenditure	\$	10,539	12,154	Total current consumption	77.4	75.7
Percentage of total expenditure				Personal taxes	15.6	17.6
Food		17.5	17.1	Security	4.7	4.7
Shelter		15.6	15.6	Gifts and contributions	2.3	2.1
Rented living quarters		5.7	6.0	Total expenditure	100.0	100.0
Owned living quarters		6.5	6.4			
Other housing		0.9	0.7			
Water and fuel		2.6	2.5			

6.10 Patterns of expenditure for families of two or more persons, by family income quintiles¹, based on survey of eight Canadian cities, 1972

Item	Lowest quintile	Second-lowest quintile	Middle quintile	Second-highest quintile	Highest quintile
Family characteristics					
Average					
Family size	No. 2.80	3.30	3.51	3.74	4.07
Children under 5	" 0.26	0.36	0.36	0.31	0.20
Children 5-15	" 0.55	0.74	0.84	0.92	0.90
Children 16-17	" 0.10	0.11	0.12	0.16	0.23
Adults 18-64	" 1.41	2.00	2.15	2.28	2.66
Adults 65 and over	" 0.54	0.15	0.11	0.11	0.13
Full-time earners	" 0.32	0.85	1.07	1.25	1.53
Age of head	yr 49.6	43.4	41.1	41.5	45.0
Net income before taxes	\$ 5,035	8,881	11,594	14,541	22,696
Other money receipts	\$ 323	190	195	227	296
Net change in assets and liabilities	\$ -305	-7	207	700	2,263

6.10 Patterns of expenditure for families of two or more persons, by family income quintiles¹, based on survey of eight Canadian cities, 1972 (concluded)

Item		Lowest quintile	Second- lowest quintile	Middle quintile	Second- highest quintile	Highest quintile
Family characteristics (concluded)						
Percentage						
Home-owners		34.2	43.7	55.7	63.4	72.6
Car or truck owners		43.6	68.7	88.2	88.1	89.3
Wife employed full-time		3.9	8.5	17.6	30.2	31.6
Average total expenditure	\$	5,685	9,113	11,543	13,873	20,556
Percentage of total expenditure						
Food		24.3	20.0	17.4	16.4	14.1
Shelter		22.9	18.4	15.9	14.7	12.8
Rented living quarters		13.3	9.1	6.3	4.9	3.0
Owned living quarters		5.0	5.6	6.5	6.8	6.9
Other housing		0.4	0.6	0.5	0.6	1.0
Water and fuel		4.2	3.0	2.5	2.4	1.9
Household operation		4.8	3.8	3.6	3.6	3.5
Furnishings and equipment		3.8	4.3	4.8	4.8	4.6
Household appliances		1.0	1.0	1.1	1.1	0.9
Other		2.8	3.3	3.7	3.7	3.7
Clothing		6.6	7.5	7.2	7.9	7.4
Personal care		2.2	2.1	1.9	1.9	1.7
Medical and health care		3.1	3.0	2.7	2.7	2.3
Smoking and alcoholic beverages		4.9	4.4	3.8	3.5	3.2
Travel and transportation		9.6	11.1	13.8	13.0	11.7
Automobile (and truck)		6.8	8.3	11.3	10.7	8.9
Purchase		2.9	3.1	5.2	5.1	4.3
Operation		3.8	5.2	6.1	5.6	4.6
Other		2.8	2.8	2.5	2.3	2.8
Recreation		3.0	3.8	3.5	3.7	3.7
Reading		0.7	0.6	0.5	0.5	0.5
Education		1.0	0.7	1.0	0.8	1.1
Miscellaneous expenses		2.1	1.9	1.8	1.9	1.5
Total current consumption		89.1	81.5	77.9	75.4	68.3
Personal taxes		6.8	12.7	15.6	17.9	23.5
Security		2.3	3.9	4.7	4.6	5.9
Gifts and contributions		1.9	1.9	1.9	2.0	2.4
Total expenditure		100.0	100.0	100.0	100.0	100.0

¹Weighted survey records of families are arranged in ascending order by size of total income and divided into five equal groups, or quintiles. Thus, each group, or quintile, represents a weighted 20% of families.

6.11 Beneficiaries under the Canada Pension Plan, by type of benefit and province, March 1974

Province or territory	Retire- ment pensions	Disability benefits		Survivors' benefits			Combined pensions	All benefits
		Disability pensions	Children's benefits	Death benefits	Widows' pensions	Orphans' benefits		
Newfoundland	4,888	985	1,182	66	1,779	2,420	—	11,335
Prince Edward Island	2,014	248	234	18	530	680	—	3,739
Nova Scotia	14,488	3,469	2,949	127	4,585	4,703	6	30,392
New Brunswick	10,683	1,454	1,193	113	3,240	3,715	1	20,468
Quebec ¹	1,253	168	116	10	608	616	—	2,782
Ontario	164,346	16,597	8,381	1,509	45,016	33,961	18	271,185
Manitoba	23,432	1,792	716	165	5,335	4,115	2	35,725
Saskatchewan	19,256	1,349	796	144	4,864	4,189	3	30,708
Alberta	28,552	2,064	1,018	238	7,227	7,074	5	46,356
British Columbia	50,247	3,495	1,312	422	11,286	9,264	9	76,306
Yukon Territory	129	6	—	1	69	99	—	306
Northwest Territories	64	5	10	7	55	127	—	268
Canada	319,352	31,632	17,907	2,820	84,594	70,963	44	529,570

¹Benefits are paid to residents of Quebec where total or partial contributions were made to the Canada Pension Plan. Excludes recipients of benefits under the Quebec Pension Plan.

6.12 Canada Pension Plan account, fiscal years 1969-70 to 1973-74 (million dollars)

Year	Revenue				Net expenditure			Excess of revenue	Balance in account
	Contri- butions	Interest on invest- ments	Other	Total	Benefits	Adminis- tration	Total		
1969-70	745.6	139.7	4.2	889.6	47.3	17.7	65.1	824.5	2,932.3
1970-71	812.9	202.7	4.5	1,020.1	89.2	19.5	108.7	911.3	3,843.6
1971-72	825.9	272.6	3.5	1,102.1	144.4	22.9	167.3	934.9	4,778.5
1972-73	897.4	341.4	4.7	1,243.4	206.3	22.6	228.9	1,014.5	5,793.0
1973-74	1,019.4	416.0	9.2	1,444.5	279.3	24.6	303.8	1,140.8	6,933.8

6.13 Canada Pension Plan Investment Fund, investments by province, fiscal years ended 1969-74 and total investments since inception (1965) to Mar. 31, 1974 (million dollars)

Securities of, or guaranteed by	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	Total investments to Mar. 31, 1974
Newfoundland	14.2	15.6	16.8	17.6	19.0	21.7	128.6
Prince Edward Island	2.9	3.2	3.5	3.6	3.8	4.3	25.6
Nova Scotia	29.2	31.6	34.0	35.7	38.6	43.8	260.8
New Brunswick	21.8	24.2	25.8	26.8	28.8	32.8	197.2
Quebec ¹	2.4	3.1	5.1	6.6	8.0	8.1	35.6
Ontario	412.0	445.8	476.0	498.3	536.4	606.6	3,703.7
Manitoba	42.3	47.7	51.5	53.7	57.4	64.5	393.4
Saskatchewan	35.9	40.4	42.9	42.7	43.2	47.8	308.5
Alberta	68.4	77.1	82.3	87.1	94.6	108.2	631.0
British Columbia	107.5	117.2	125.1	131.2	141.5	161.7	970.2
Federal government	5.6	4.1	5.4	6.5	7.1	7.9	42.4
Total investments	742.2	809.9	868.5	910.0	978.3	1,107.4	6,697.0
Balance in Fund	2,022.9	2,832.7	3,701.3	4,611.3	5,589.6	6,697.0	...

¹Investments in Quebec reflect the participation of members of the Armed Forces and RCMP in that province who are covered by the Canada Pension Plan.

6.14 Old Age Security (OAS) and Guaranteed Income Supplement (GIS), number of recipients in March 1974 and net benefits paid, by province, fiscal year 1973-74 with totals for 1970-74

Province or territory	OAS recipients in March			Net benefits paid during fiscal year		
	Total	Also receiving		OAS only \$ '000	GIS only ¹ \$ '000	OAS plus GIS \$ '000
		Full GIS	Partial GIS			
Newfoundland	34,261	19,847	9,027	41,993	22,216	64,209
Prince Edward Island	12,873	5,197	4,671	15,862	7,261	23,123
Nova Scotia	75,815	26,319	25,495	93,330	38,121	131,450
New Brunswick	57,565	20,841	18,441	71,083	28,471	99,554
Quebec	448,745	147,648	136,296	546,609	209,418	756,027
Ontario	682,411	124,301	213,991	834,159	229,819	1,063,978
Manitoba	101,100	25,745	36,959	123,827	44,416	168,243
Saskatchewan	98,937	25,055	35,677	122,983	41,213	164,196
Alberta	126,009	33,193	43,527	154,272	54,777	209,049
British Columbia	219,304	48,485	74,608	268,522	83,405	351,927
Yukon Territory	525	229	101	640	293	932
Northwest Territories	936	625	147	1,145	658	1,803
Canada	1974 1,858,481	477,485	598,940	2,274,424	760,068	3,034,492
	1973 1,808,233	480,960	564,507	1,786,420	737,925	2,524,345
	1972 1,762,550	480,600	493,547	1,679,295	526,060	2,205,355
	1971 1,720,128	473,116	387,276	1,627,219	280,005	1,907,225
	1970 1,670,639	391,421	421,414	1,467,057	263,479	1,730,535

¹Breakdown between "partial" and "full" Guaranteed Income Supplement is not available.

6.15 Family Allowances, number of children and families¹ for whom Family Allowances were paid in March 1974² and net total allowances paid, by province, fiscal year 1973-74³ with totals for 1970-74

Province or territory	Allowances paid in March		Net total allowances paid during fiscal year ³ \$
	Families ^{1,2} No.	Children ² No.	
Newfoundland	86,012	223,540	29,300,712
Prince Edward Island	16,438	40,954	5,408,364
Nova Scotia	122,606	276,957	35,965,280
New Brunswick	98,833	233,766	30,352,468
Quebec	921,498	1,971,017	257,929,778
Ontario	1,199,479	2,534,619	330,835,859
Manitoba	147,003	325,042	42,259,095
Saskatchewan	131,609	304,825	40,031,421
Alberta	263,479	587,147	76,643,533
British Columbia	346,695	725,635	94,171,048
Yukon Territory	3,314	7,226	964,578
Northwest Territories	6,676	17,838	2,383,398
Canada	1974 3,343,642	7,248,566	946,245,534
	1973 3,109,554	6,756,751	548,623,294
	1972 3,063,287	6,782,697	554,407,332
	1971 3,024,423	6,824,479	557,877,821
	1970 2,977,556	6,865,302	560,049,928

¹Includes children in the care of child-placement agencies, administrators or trustees; each such child is being considered the sole member of a family of one.

²The number of children and families shown for March 1974 are those in receipt of Family and Special Allowances under the new Act; they therefore include children of 16 and 17 years of age.

³The figures shown here for the year ending March 1974 include expenditures under the former Family Allowances Act for the period April to December 1973 and under the new Act for the period from January to March 1974.

6.16 Youth Allowances, number of youths for whom allowances were paid in December 1973, and net total allowances paid, fiscal year 1973-74

Province or territory	Youths for whom allowances paid in December 1973 ¹ No.		Net total allowances paid \$
Newfoundland	17,029		1,550,791
Prince Edward Island	3,788		353,166
Nova Scotia	26,995		2,536,656
New Brunswick	24,334		2,172,504
Quebec ²			
Ontario	249,337		23,192,722
Manitoba	31,523		2,882,176
Saskatchewan	31,423		2,932,448
Alberta	55,089		5,071,883
British Columbia	70,682		6,268,604
Yukon Territory	428		37,310
Northwest Territories	705		65,156
Canada December 1973	511,333	1973-74	47,063,416
March 1973	513,714	1972-73	59,209,420
March 1972	516,253	1971-72	59,651,007
March 1971	508,960	1970-71	58,020,099
March 1970	484,476	1969-70	55,101,899

¹Effective Jan. 1, 1974, the Youth Allowances Act was repealed and replaced by the Family Allowances Act, 1973.

²Until December 1973, Youth Allowances in Quebec were not provided by the federal government but were paid by Quebec under its own Schooling Allowances Program. Compensation to Quebec was made under the terms of the Established Programs (Interim Arrangements) Act.

6.17 New Horizons Program, number of projects approved and total of grants paid, by province, fiscal years 1972-73 and 1973-74

Province or territory	1972-73 ¹		1973-74	
	Projects No.	Grants paid \$	Projects No.	Grants paid \$
Newfoundland	9	44,580	24	159,790
Prince Edward Island	10	27,106	16	53,479
Nova Scotia	18	173,646	31	364,399
New Brunswick	29	138,522	51	281,273
Quebec	126	522,820	393	2,038,887
Ontario	137	600,501	548	3,151,718
Manitoba	31	133,880	122	484,183
Saskatchewan	33	118,128	137	457,345
Alberta	36	139,297	103	609,346
British Columbia	62	237,528	186	1,007,127
Yukon Territory and Northwest Territories	2	9,136	3	17,880
Canada	493	2,145,144	1,614	8,625,427

¹These figures only cover a period of six months as the program became operational in September 1972.

6.18 Canada Assistance Plan: recipients of social allowances, by province, March 1973

Province and program	Cases				Depen- dents	Total recip- ients ^{1,2}
	Single persons	Family heads	Unclas- sified	Total ¹		
NEWFOUNDLAND	8,156	14,105	—	22,261	48,651	70,912
Long term	6,130	9,446	—	15,576	29,255	44,831
Short term	2,026	4,659	—	6,685	19,396	26,081
PRINCE EDWARD ISLAND	1,511	1,428	—	2,939	4,299	7,238
NOVA SCOTIA	13,536	10,139	—	23,675	27,228	50,903
Provincial	8,746	5,489	—	14,235	14,607	28,842
Municipal	4,790	4,650	—	9,440	12,621	22,061
NEW BRUNSWICK	6,161	11,448	—	17,609	40,966	58,575
Cash	5,308	8,848	—	14,156	30,614	44,770
Voucher	853	2,600	—	3,453	10,352	13,805
QUEBEC	—	—	175,016	175,016	231,436	406,452
ONTARIO	72,288	70,759	—	143,047	164,833	307,880
Family benefits (provincial)	36,908	45,818	—	82,726	107,770	190,496
General welfare (municipal)	35,380	24,941	—	60,321	57,063	117,384
MANITOBA	3,075	2,231	26,335	31,641	38,786	70,427
Long term	—	—	26,335	26,335	31,602	57,937
Short term	3,075	2,231	—	5,306	7,184	12,490
SASKATCHEWAN	15,000	10,255	—	25,255	31,473	56,728
ALBERTA	13,875	19,683	—	33,558	51,898	85,456
Provincial	12,881	18,105	—	30,986	47,344	78,330
Municipal	994	1,578	—	2,572	4,554	7,126
BRITISH COLUMBIA	25,038	22,508	—	47,546	56,443	103,989
Total	158,640	162,556	201,351	522,547	696,013	1,218,560

¹Includes some individuals in institutions in some provinces.

²Includes dependents; there is some duplication where recipients receive benefits under more than one program.

6.19 Federal share of Canada Assistance Plan costs¹, by province, fiscal years ended Mar. 31, 1972 and 1973 (dollars)

Province	1971-72	1972-73	Province or territory	1971-72	1972-73
Newfoundland	25,558,567	26,016,332	Manitoba	36,304,036	36,203,999
Prince Edward Island	4,040,832	4,397,708	Saskatchewan	25,306,573	29,102,710
Nova Scotia	21,857,283	22,194,797	Alberta	42,808,250	53,049,073
New Brunswick	20,228,516	22,943,728	British Columbia	68,563,426	69,979,465
Quebec	^a	504,640 ^a	Yukon Territory	295,782	696,696
Ontario	211,035,023	210,492,432	Total	455,998,288	475,581,580

¹Includes payments made for claims received during the fiscal year for expenditures made in the previous fiscal year.

^aCompensation to Quebec is made primarily under the terms of the Established Programs (Interim Arrangements) Act. In 1971-72 and 1972-73 these payments amounted to \$270.1 million and \$293.2 million, respectively. The totals do not include these sums.

6.20 Blind and Disabled Persons' Allowances, by province, fiscal year 1973-74

Province or territory	Allowances for the blind		Allowances for the disabled	
	Recipients in March No.	Federal contribution during year \$	Recipients in March No.	Federal contribution during year \$
Newfoundland	273	193,109	16	7,116
Prince Edward Island	48	32,066	4	1,905
Nova Scotia	398	274,154	183	101,381
New Brunswick	341	231,278	1,743	790,852
Quebec ¹	312	253,501	556	438,730
Ontario	81	27,479	168	71,736
Manitoba	122	70,331	220	99,229
Saskatchewan	32	22,062	46	20,665
Alberta	161	115,589	1,198	538,132
British Columbia	31	120,211	216	605,676
Yukon Territory	2	1,912	3	1,912
Northwest Territories	13	14,767	16	11,799
Canada	1,814	1,356,459	4,369	2,689,133

¹Compensation to Quebec is made under the terms of the Established Programs (Interim Arrangements) Act.

6.21 Pensions in force under the Pension Act as at Mar. 31, 1974

Service	Disability		Dependent		Total	
	Pensions No.	Liability \$	Pensions No.	Liability \$	Pensions No.	Liability \$
World War I	16,726	34,377,436	11,723	42,963,237	28,449	77,340,673
World War II	99,459	169,618,391	15,286	49,947,242	114,745	219,565,633
Special Force	2,072	3,111,330	166	515,912	2,238	3,627,242
Regular Force	3,978	5,015,788	677	2,753,637	4,655	7,769,425
Total	122,235	212,122,945	27,852	96,180,028	150,087	308,302,973

Sources

6.1 - 6.10 Consumer Income and Expenditure Division, Household Statistics Branch, Statistics Canada.

6.11 - 6.20 Program Information and Documentation Division, Policy and Program Development and Coordination Branch, Welfare, Department of National Health and Welfare.

6.21 Public Relations, Department of Veterans Affairs.

Chapter 7

Education and the arts

The cost of education in Canada for 1972 has been estimated at \$8,784.7 million, an amount representing almost 9% of the gross national product (GNP); by comparison, the cost of education in 1960 represented only 4.3% of the GNP. During the 1960s school and university enrolment increased by 50% and staff by 70%, and by 1971, it was estimated that approximately 30% of the entire population of Canada was either receiving or dispensing education.

The necessity of assuring equality of opportunity and of providing diversified programs has led education planners to offer a wide choice of courses at all levels of education. At the secondary level courses now include fine arts, music, drama, urban planning and social geography. Community colleges and vocational institutions provide a widening range of advanced technological and para-professional courses. Universities offer varied interdisciplinary programs at the undergraduate and graduate levels and some have instituted programs of Canadian studies.

At the post-secondary non-university level, several new structures have evolved. The most innovative type of institution that emerged across the country in the 1960s is the community college. In Quebec there are now about 35 colleges of this type, many of them formerly operated by religious communities. They are now known as *collèges d'enseignement général et professionnel* and are commonly referred to as CEGEPs. There are also about 20 private classical colleges in the province, some of which will probably be absorbed into the CEGEP group within the next few years. In Ontario, colleges of applied arts and technology (which incorporated the former institutes of technology and the provincial vocational centres and are known as CAATs) were set up in 1967 in 20 regions. This upsurge in the establishment of additional post-secondary vocational and technological institutions has occurred all across Canada to meet the labour market's increasing need for qualified technicians.

Another significant change in education is the greater accessibility of programs to students regardless of sex. Females, who constituted about 36% of the full-time university and community college enrolment in 1971-72, are increasingly selecting, and being selected for, certain post-secondary courses which previously had shown almost total male enrolments.

One of the notable increases in teaching facilities is in the area of library service. School libraries provide up-to-date reference books on all subjects in the school curricula and have assumed increasing importance as resource centres for audio-visual aids such as projectors, films, filmstrips, maps, tapes and records.

Efforts are also being made to overcome the financial barriers to continuing education. Investigations by demographers and sociologists confirmed that financial constraints were denying advanced education to many Canadians. Consequently, various methods have been tried to lighten the financial burden on the individual and to equalize the rapidly increasing load being carried by the taxpayer. The federal government is assuming an increasingly prominent role in education, particularly in the retraining program of the Department of Manpower and Immigration which involves adult technical and vocational training, as well as in post-secondary education and university education, all matters of prime concern to the nation as a whole.

7.1 Administration and organization of education

7.1.1 Responsibility for education

7.1.1.1 Federal responsibility

In Canada the organization and administration of public education is exercised by the provincial and territorial governments. The federal government is directly concerned only with schools for Indian children which are administered by the Education Branch of the federal Department of Indian Affairs and Northern Development, with schools for children of servicemen operated in Europe by the Department of National Defence, and with schools for inmates of federal penitentiaries. In addition, the federal government finances retraining of

adults, provides financial support to the provinces amounting to at least 50% of operating costs of post-secondary education, participates to a considerable extent in informal education, and makes grants-in-aid for research personnel and equipment in universities. More detailed information on federal responsibility for education is given in Sections 7.1.2 and 7.1.5.

7.1.1.2 Provincial responsibility

Each of the 10 provinces and the two territories has the authority and responsibility for its own education system. As a consequence, organization, policies and practices differ from one to the other. Each has a department of education or of education and youth, headed by a Minister who is a member of the Cabinet in the case of the provinces or responsible to the Council in the case of the territories; Ontario has, in addition, a Ministry of Colleges and Universities, Manitoba a Department of Colleges and Universities Affairs and Alberta a Department of Advanced Education. Each provincial department is administered by a Deputy Minister who is a professional educationist and a public servant. He advises the Minister, supervises the department and gives a measure of permanency to its education policy and, in general, carries out that policy and is responsible for the enforcement of the Public School Act. The department of education usually also includes a chief inspector of schools and a staff of local inspectors, as well as directors or supervisors of curricula, technical education, teacher training, home economics, guidance, physical education, audio-visual education, correspondence instruction, adult education, other specialized sections according to the needs of the particular province, and technical personnel and clerks.

Other provincial departments having some responsibility for operating school programs include departments of labour which operate apprenticeship programs, agriculture departments which operate agriculture schools, departments of attorney general or of welfare which operate reform schools, and departments of lands and forests which operate forest ranger schools.

Each department of education has undertaken, among other things, to provide inspection services to ensure maintenance of standards, teacher certification, courses of study and lists of prescribed or approved textbooks, financial assistance to local authorities in the construction and operation of schools and guidance regulations for trustees and teachers. In return, each department requires regular reports from the schools. When first introduced, government grants to schools were based on such factors as number of teachers, enrolment, days in session and attendance. Later, special grants were introduced in most provinces to meet a variety of expenditures, such as construction of a first school, organization of special classes, transportation of pupils, school lunches and other contingencies. A number of provinces made provision for equalization grants and now most of them have a foundation program of one kind or another.

The work of the departments of education has grown considerably. Many have expanded their services in the fields of health, audio-visual aids, art, music, agriculture, sociology, special education, correspondence courses and pre-vocational and trade courses. At the same time there has been an increasing delegation of authority to local boards and school staffs. One illustration of this tendency is a reduction in the number of departmental (external) year-end examinations. Few provinces now provide for more than one or two such examinations — at the end of the final and, in some cases, at the end of the second-to-last year of the secondary school course. Another example is the increasing use of lists of approved textbooks from which local authorities may make their own choice, instead of lists of prescribed texts. Courses of study are now seldom planned by only one or two experts in the department; instead, they result from conferences and workshops including active teachers and other interested individuals or bodies. In most provinces “curriculum development” is considered to be a continuous procedure.

7.1.1.3 Elementary and secondary schools

In all provinces schools are established and operated by local education authorities functioning under the terms of a Public School Act and held responsible to the provincial government and resident ratepayers for the actual operation of the local schools. Through the delegation of authority, education has become a provincial-local partnership with the degree of decentralization reviewed intermittently.

Elementary and secondary schools may be classified as publicly controlled or private. The publicly controlled schools, sometimes referred to as "public" schools (including separate schools), encompass those that operate under the provincial school system with locally appointed or elected school boards. Private schools generally either provide a similar curriculum to that of publicly controlled schools or concentrate on business, commercial, trade, technical and correspondence courses, or provide a combination of such courses.

Under recent amendments to provincial legislation, school units have been consolidated and consequently enlarged in all provinces. With the growth of cities and towns and of educational facilities and requirements, the old three-member local school board became inadequate as an administrative structure. The original school boards remained as units but provision was made for urban school boards consisting of more members, responsible for both elementary and secondary schools and for providing the necessary staff, buildings, equipment and transportation. The local boards still in existence in some districts have limited powers and duties, usually functioning in an advisory capacity and looking after buildings and grounds.

7.1.1.4 Community colleges

Although there are some privately operated colleges, the provinces are partially or totally responsible for co-ordinating, regulating and financing community colleges and related institutions. Some provincial governments completely finance these colleges while others do so in part. Similarly, the degree of local autonomy given the colleges varies by province.

Since 1960 Alberta, British Columbia, Ontario and Quebec have established new community college structures. In Alberta, the provincial agency is the Alberta College Commission composed of nine members, all appointed by the government. In British Columbia, an advisory board — the Academic Board — serves both universities and colleges and consists of nine members, six appointed by the universities and three by the provincial government. In Ontario, the administration of community colleges is carried out by the Ministry of Colleges and Universities. In Quebec, the Department of Education is responsible for many agency functions. The composition of governing boards varies by province; for example, in Quebec, it consists of 19 members including representatives from the university, the principal and academic dean, students and parents of students.

7.1.1.5 Universities

There are distinctive differences in Canadian systems of higher education. The universities and colleges long ago established by the French were based on the culture of Old France and were administered by Roman Catholic groups, either religious or secular. These French-language institutions still retain their traditional characteristics but now conform almost entirely to the North American system of administration. The largest group of universities and colleges in Canada is administered by English-speaking staff and offers instruction in English. Apart from those founded and still administered by various Protestant religious groups, these institutions are mainly non-denominational, having been established through private subscription or by the provincial government concerned.

Civil legislation regarding the establishment of new institutions or changes in existing ones is usually enacted by provincial legislatures, except for federal military colleges and a few institutions originally established by Act of the Canadian Parliament. Once an institution is legally chartered, control is vested in its governing body, the membership of which is indicated in the charter. The line of authority runs from the board of governors through the president (or rector) to the senate and deans and the faculty as a whole. The composition of the board of governors varies according to the type of institution. Provincial universities normally have government representation; church-related institutions have clergymen. Nearly all boards have either direct representation from the business community, alumni associations and other organizations, or are advised by these groups through advisory boards or committees. A recent phenomenon has been the inclusion of students on administrative bodies. The size of the board varies from a very few to over 60. It has ultimate control of the university and normally reserves to itself complete financial powers, including the appointment of the president and most other staff. On occasion there is faculty representation on the board and recently there have been attempts on the part of faculty groups of many institutions to obtain greater representation on the boards of governors. Responsibility for academic affairs is usually delegated to the senate. Composed mainly of faculty members, although there may also be

alumni and representatives of non-academic groups included, the board is responsible for admission, courses, discipline and the awarding of degrees.

7.1.2 Levels of education

7.1.2.1 Pre-grade 1, elementary and secondary education

Pre-grade 1 enrolment in schools is neither compulsory nor universal throughout Canada, although kindergartens for five-year-olds are part of the elementary school system in large urban centres in most provinces. Recently, an increasing number of kindergartens are accepting four-year-olds. There are also some kindergartens which are run by private individuals and which accept children of three to five years of age.

Each September, most Canadian six-year-olds enter an eight-grade publicly controlled (including separate) elementary school. At about 14 years of age, a significant proportion of those who entered grade 1 move on to a four- or five-year secondary school. Less than 3% of the elementary and secondary students in Canada attend private schools.

The 8-4 plan leading from grade 1 to university was for many years the basic plan for organizing the curriculum and schools other than those under the jurisdiction of the Catholic school boards of Quebec. This plan, although still followed in some school jurisdictions, has been modified from time to time in all provinces, cities or groups of schools. There are a number of variants to be found in Canada at present: the addition of one or even two years of secondary schooling; the introduction of junior high schools, changing the organization to a 6-3-3 or 6-3-4 plan; or, the combining of the first six years of elementary school into two units, each designed to reach specified goals during the three-year period. In the recently established community colleges, the last one or two years of high school and the first one or two years of college are offered.

At the secondary level, three programs can generally be distinguished — the university entrance course, the general course for those wishing to complete an academic type of program before entering employment, and vocational courses for those wishing to enter skilled trades or pursue further training in the technological fields. However, in recent years changes in the curricula have allowed the student greater flexibility in program selection.

Secondary schools were at one time predominantly academic and prepared their pupils for entry into university. Until recently, vocational schools were to be found only in the large cities, although schools in some of the smaller centres did provide a few commercial and technical subjects as options in the academic curriculum. Today, in addition to the vocational schools and the regular secondary schools providing commercial courses, there are increasing numbers of composite and regional high schools offering regular academic subjects and vocational training in such courses as home economics, agriculture, shop-work and commercial subjects. Occupational or pre-employment classes, set up as part of the total program in regular vocational schools, require from one to three years or even four years for completion, and are terminal in nature. In addition to this type of course, some schools offer special, ungraded one- or two-year vocational programs to students who have completed the final years of high school. Some secondary schools also provide occupational programs for students who have shown no particular aptitude for an academic education or for training in a particular trade. These students learn no specific trade until perhaps their third year of studies. By remaining in school longer, however, they adjust more easily to conditions in the work world.

7.1.2.2 Special education

There is increasing interest in the education of exceptional children. For gifted children, innovative, enriched and accelerated programs are being developed at both the elementary and secondary levels. New types of special classes are sometimes started by parents of children with a common disability, who band together to provide help and show the need for such service, which may then be taken over by public bodies. Progress in providing such education varies from province to province and is most commonly found in city school systems. There are six schools for the blind, 16 schools for the deaf, and a number of training schools for mental defectives. Special classes are conducted in tuberculosis sanatoria, mental hospitals and reformatories.

7.1.2.3 Trade and technical education

Increasing use of automated processes in business and industry is resulting in a shrinking market for unskilled and semi-skilled workers. Early school dropouts are finding it more difficult to get suitable employment and many are trying to acquire in their adult years the general education or training in the skilled trades that they missed in their youth. Persons still in the regular school system are tending to remain longer and go farther in the system, partly because of the changing attitudes of society toward education and partly for economic reasons.

To meet this growing demand for better educational facilities, educators are striving to provide comprehensive programs at all levels to satisfy the needs not only of the university-bound but also of the great majority who require adequate preparation for early entry into the labour force. It is now accepted that vocational education for adults as well as for youths is a public responsibility that must be made available, as needed, throughout the person's working life. Education of this nature is of national concern and has a direct impact on material prosperity, the economy and the standard of living.

The pattern of vocational education in Canada varies from province to province and there are variations within the provinces. However, there are three basic types of institutes offering vocational education: secondary schools, trade and occupational training schools and post-secondary institutes of technology. Many municipal school boards provide vocational courses as part of the regular secondary school program in technical or composite-type schools. Students in these schools get some general vocational training or training in certain specific fields, such as typing or auto mechanics, along with instruction in general academic or cultural subjects.

Trade and occupational training schools, on the other hand, are open only to those who have passed the provincial school-leaving age and have left the regular school system. These schools offer specialized training and their purpose is to develop competent people for a variety of occupations. Courses at the trade level do not usually require high school graduation; the grade level demanded varies according to province or trade from grade 8 to grade 12.

The third type, the institutes of technology, operate at a higher level of training. Enrolment in these institutions requires high school graduation or at least high school standing in such relevant subjects as mathematics and the sciences. Graduates from institutes of technology are awarded diplomas of applied arts or diplomas of technology and form an essential link between professionals on the one hand and qualified craftsmen on the other. Most of the institutes of technology and trade schools across Canada are provincially operated.

In addition to the vocational education and training provided by these three types of publicly operated schools, many private business colleges and trade schools offer a wide variety of business, trade and technical courses, some through correspondence. Vocational education is also carried out under a system of apprenticeship training. Such training is given mainly on the job, with classes taken at the trade schools either during the evening or full-time during the day for periods ranging from three to 10 weeks a year.

7.1.2.4 Tertiary education

Community colleges and related institutions provide post-secondary education in various programs that enable students to proceed to university with credit of up to three years of university study, or undertake technical/vocational training in programs of up to four years in duration, leading to the occupational level of the skilled technologist.

Entry requirements involve secondary school graduation but in some institutions a "mature student" status is used to enable promising but otherwise ineligible students to enter. Qualifying programs are also offered to help students overcome academic deficiencies.

Programs offered in the technical/vocational sphere are widely diversified and reflect the manpower requirements of the college region. Other programs offered are: business administration, applied arts, health sciences and a wide variety of technologies such as architectural, mechanical, electrical, chemical and resource. Many of these colleges offer credit and non-credit programs in continuing education.

There were approximately 150 institutions offering college-level programs in Canada in 1972-73. The Atlantic provinces had 12 colleges: the College of Fisheries and the College of Trades and Technology in Newfoundland; Holland College in Prince Edward Island; two marine institutes, two technical institutes, a land survey institute and an agricultural college in

Nova Scotia; and two technical institutes and a forest ranger school in New Brunswick. Quebec had a total of 68 colleges including 35 CEGEPs (*collèges d'enseignement général et professionnel*), 29 private colleges and several other colleges operated by departments other than education. In Ontario there were 26 CAATs (colleges of applied arts and technology), four agricultural colleges, three regional medical laboratory institutes, one college of art, one chiropractic college and one school of horticulture.

The western provinces had 34 colleges as follows: Manitoba, three community colleges; Saskatchewan, two public colleges and two private colleges; Alberta, six community colleges, three agricultural and vocational colleges, two technical institutes and two private colleges; and British Columbia, nine community colleges, two schools of art, two private colleges and one technical institute.

7.1.2.5 Nursing education

Traditionally, nurses' (RN) diploma courses have been conducted in hospital schools. In 1964 Ryerson Institute of Technology became the first non-hospital institution in Canada to provide nurses' diploma training. Since then, there has been a definite trend toward giving the theoretical part of the instruction in community colleges and providing only the practical instruction in hospitals. Several provinces — Quebec, Saskatchewan, Alberta and British Columbia — offer nurses' training in non-hospital schools. Ontario has a network of regional schools of nursing which are neither part of the general education system nor under the administration of hospitals.

Another trend in nursing education is a shortening of the course from three years to two, except in Quebec where the three-year training period will remain (according to present plans) with the first two years spent in CEGEPs and the third in hospital to gain "polytechnical" training.

In addition to nursing education solely at the post-secondary non-university level, students receiving their nurses' (RN) diploma in hospital schools may qualify for a degree on completion of the necessary additional one- or two-year course or longer (depending on the institution) offered by some universities. Further, undergraduate and graduate degrees are offered to students who enter university directly from secondary school.

7.1.2.6 Teacher training

All provinces require candidates for elementary school teaching certificates to have high school completion or better, with at least one year of professional training in a faculty of education or a teachers' college. The training usually consists of professional and academic courses and some time spent in practice teaching. High school teachers are generally university graduates who have taken an additional year of professional training in a college of education, or who have graduated with a degree in education. The trend is for departments of education to delegate to universities the responsibility for training elementary school teachers as well as secondary school teachers.

In all provinces except Nova Scotia, Quebec and Ontario, all teacher training is conducted at the university level where three or four different courses leading to a degree are provided; about three quarters of the time is devoted to academic courses in arts and science and the remainder to professional courses. Teachers' colleges still exist in these three provinces but are generally disappearing as independent institutions. In Nova Scotia, there is no plan to integrate its one teachers' college with the university, but an optional third year will be included in the program which currently requires two years after senior matriculation. Five universities also offer degree programs in education. The pattern in Quebec is for students to first complete the two-year academic program in a CEGEP and then continue their teacher training at university. Sixteen *écoles normales* have been absorbed by other institutions since 1969-70 and only five are still in operation. In Ontario only eight teachers' colleges remain, and by 1973-74 only persons holding a university degree were accepted for teacher training.

7.1.2.7 University and college education

A university may be defined as an institution of post-secondary education, professional training and research which grants first and advanced degrees; a college is an institution with usually only one faculty granting a first degree but is more likely to be affiliated with a degree-granting university. To qualify for entrance into university, students must have high school

graduation (11 to 13 years of schooling depending on the province) or equivalent standing. In Quebec the new "collegial" program requires two years of CEGEP training before entering university. An applicant who lacks the usual academic qualifications may gain admittance to university after reaching a certain age by passing entrance examinations and being assessed as a "mature" student.

Courses of instruction ranging in duration from three to five years (in Quebec a minimum of five years from high school graduation) lead to a bachelor degree in arts, pure science and such professional fields as agriculture, engineering, business administration, pharmacy, nursing and education. Courses in law, theology, dentistry, medicine and some other fields are longer — usually requiring completion of part or all of a first-degree course in arts or science for admission. For those pursuing graduate studies and research, the second degree is normally the master's or licence (at least one year beyond the first degree) and the third is the doctorate (normally requiring at least two additional years beyond the second degree).

7.1.2.8 Continuing education

A relatively new phenomenon in Canadian education is the growth of continuing education, sometimes referred to as adult education. The provision of evening and summer extension and correspondence courses in a variety of subjects is now an important part of the education system. Diversified programs of study for adults through correspondence and extension courses are offered by school boards, provincial government schools, private trade schools and business colleges, business and professional associations, community colleges and related institutions, and universities. As a result, men and women who find it impractical or impossible to attend full-time or regular classes because of business and family responsibilities, illness or inaccessibility to schools are able to pursue accreditation at diverse educational levels or to advance their personal interests. Correspondence course study provides instruction to children and adults confined to home or hospital and to inmates of Canadian correctional institutions.

School boards, universities and community or regional colleges offer courses leading to formal accreditation as well as courses reflecting individual and community interests. Recent surveys of school boards and universities indicate that some 560,000 adults are enrolled in formal high school and university level courses on a part-time basis. In addition, more than 500,000 adults participate in a host of non-credit courses and related activities.

Another avenue that provides adults an opportunity to continue their education is home study. A recent survey of the provincial departments of education shows that more than 71,000 adults were enrolled in correspondence study courses. Several universities also offer degree or diploma credit courses through correspondence study.

7.1.3 Provincial and territorial education systems

The following paragraphs outline the administration and organization of education in all provinces and territories, emphasizing the important changes that have occurred in recent years.

Newfoundland. Until recently, the system of education in Newfoundland, originally established in 1874, was strictly denominational. As a result of the recommendations of a provincial Royal Commission on Education and Youth set up in 1964, consolidation of the school systems of the major Protestant denominations has taken place but the Roman Catholic, Pentecostal and Seventh Day Adventist denominations still operate their own schools. Further reorganization occurred in 1969 when schools operated by 300 denominational boards in the province were regrouped into 35 districts. The Pentecostal Assemblies and the Seventh Day Adventists each operate one "school district" which, in theory if not in practice, embraces the whole province. The largest single denomination in the province, the Roman Catholic, continues to operate its own system but the number of its boards was recently reduced from over 100 to 15.

Pre-grade 1 enrolment in Newfoundland is not compulsory but, with the construction of larger and more centralized elementary schools, increasing numbers of five-year-olds have been admitted for instruction in kindergarten classes and, by the fall of 1971, the kindergarten enrolment as a proportion of the five-year-old population had reached 95%. The number of children in nursery schools and kindergartens run by private individuals remains quite small.

There are two major patterns of school organization in the province: elementary schools (kindergarten and grades 1-6) with central high schools (grades 7-11), and elementary schools (kindergarten and grades 1-8) with regional high schools (grades 9-11). There are only a few junior high schools (grades 7-9) in the province which is also served by a network of 11 district vocational schools. No vocational instruction, except for commercial courses, is given in the secondary schools.

Tertiary education includes both university and post-secondary non-university programs. Memorial University in Newfoundland offers degree courses in arts and sciences, commerce and business administration, education, engineering and applied sciences, and certificate courses in public administration and banking. Post-secondary non-university education is offered at the College of Trades and Technology and the College of Fisheries, Navigation, Marine Engineering and Electronics. Nurses' (RN) diploma courses are conducted exclusively in hospital schools.

Prince Edward Island. During the past decade, Prince Edward Island has moved from small education units toward consolidation. In July 1972, a major reorganization of the provincial school administration changed the system formerly organized along county lines to one of five administrative units.

Kindergarten classes are not part of the publicly controlled school system; however, nurseries and kindergartens operated by private individuals provide some pre-grade 1 classes although the enrolment is still quite small in relation to the four- and five-year-old population.

The major pattern of school organization in Prince Edward Island until junior matriculation is: elementary school (grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-12); an additional pattern consists of elementary school (grades 1-8) and high school (grades 9-12). As in other provinces, Prince Edward Island is working toward a system that will eliminate grade promotion in favour of subject promotion, using a credit system. Five percent of the elementary and secondary pupils currently receive their education in French, and French is taught as a second language in all other schools.

The province is served by a network of 15 regional high schools offering academic programs from grades 9-12 and a one- or two-year business education course. Two vocational high schools provide a variety of four-year trade courses — a one-year orientation program followed by three years of training in a specific trade concomitant with academic instruction in language, mathematics and science.

The Prince Edward Island School of Nursing is now the only establishment offering a nursing diploma leading to professional registration (RN). Two new institutions were opened in Charlottetown in 1969 — the University of Prince Edward Island which replaced the former Prince of Wales College and St. Dunstan's University, and Holland College which offers post-secondary vocational training.

Nova Scotia. As in other provinces, Nova Scotia has had changes in the organizational structure of elementary and secondary education. The Educational Assistance Act and certain amendments to the Education Act, both passed by the provincial legislature in 1968, allowed for the creation of amalgamated school boards. Three amalgamated boards began operation in 1970-71, and their operation is being evaluated. In addition, there are other boards designated as rural, urban and regional.

Nova Scotia has almost 100% of its five-year-old population in "primary" year in the publicly controlled schools; perhaps as a consequence, enrolment in private nurseries has increased only slightly in recent years.

The predominant grade organization in this province is: elementary school (primary and grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-12). There are a few variations in this basic school pattern, such as primary to grade 6 and grades 7-12, or primary to grade 9 and grades 10-12. In 1969, a modified junior high school program was authorized which gives students of average or above-average standing extra instruction in one or more subjects. High school graduation is at either the grade 11 (junior matriculation) or the grade 12 (senior matriculation) level, although enrolment in the latter is not universal in this province. As a result of revisions in the school system since 1966, 13 regional vocational schools replaced the county vocational schools. Students now attend regional vocational schools for occupational training since the secondary schools provide only business and commercial programs.

In 1969, authority was given for the award of high school equivalency diplomas to adults who had not completed high school but had improved their educational standing through job experience or informal training. This diploma is awarded on the basis of a series of tests, developed and validated over a 25-year period by the Commission on Accreditation of the American Council on Education; Nova Scotia is the first Canadian province permitted to use these tests.

Nova Scotia has two institutes of technology offering trade-level and post-secondary vocational courses, an agricultural college providing post-secondary terminal and university transfer programs, and a land survey institute. All nursing training leading to the RN diploma is carried out in hospital schools. There are several universities and colleges offering degree programs in many disciplines. Teacher training is given in one teachers' college and degree programs in education are offered in five universities — Acadia, Dalhousie, Mount Saint Vincent, St. Francis Xavier and Saint Mary's.

New Brunswick. There are 33 school districts in the province combined into seven regions, each administered by a regional superintendent. Instruction is available in both English and French; 34% of the student population at the elementary and secondary level take their instruction in the French language.

Pre-grade 1 classes are not offered in the publicly controlled school system, except in unusual or experimental circumstances. Enrolment in private nurseries and kindergartens is also low in proportion to the number of five-year-olds in the province.

The province has a 12-year system of public education leading to junior matriculation. The most common patterns of school organization are: elementary school (grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-12); and elementary school (grades 1-6) and high school (grades 7-12). Vocational courses are taught within the framework of the secondary school system and are taken concomitantly with academic instruction.

The New Brunswick Institute of Technology in Moncton and the Saint John Institute of Technology offer post-secondary vocational and technical programs. Teachers' colleges still exist in New Brunswick although there is an indication that they will soon be integrated with the university system. In addition to six hospital schools, the Saint John School of Nursing offers training leading to the RN diploma. This province has four universities offering a variety of degree programs.

Quebec. In 1964, the Quebec government, acting on recommendations of the provincial Royal Commission on Education (1961-64), passed legislation (under Bill 60) establishing a new administrative structure for the school system in that province; the Department of Education replaced the former Departments of Youth and of Public Instruction. Today, in addition to the Minister and Deputy Minister, the structure of the Ministry includes two Associate Deputy Ministers — one for the Catholic sector and one for the non-Catholic sector. This change of system required large increases in education expenditures to finance the building of new schools and to acquire additional teaching personnel and materials. In September 1971, there were 64 regional school boards (55 Catholic and nine Protestant) with 993 affiliated local school boards.

Kindergartens admitting five-year-olds are now part of the school system and in 1972-73 over 90% of the five-year-old population was registered. Elementary education, intended for pupils aged six to 11, is given in publicly controlled schools operated under the direction of local school boards. Since the autumn of 1968, pupils are enrolled in the first grade only if they have reached the age of six by October 1. The new system calls for six years of elementary school, five years of secondary school and a collegial level to be taken in post-secondary non-university institutions. Another emerging trend is a composite course with graduated options and promotion by subject matter.

The federal Department of Indian Affairs and Northern Development assumes full responsibility for the education of Inuit children living in northern Quebec, and uses the curriculum established by the Department of Education of Quebec.

Collèges d'enseignement général et professionnel (CEGEPs), inaugurated at the beginning of the 1967-68 school year, replaced many of the former classical colleges, normal schools, schools of nursing and technical institutes. These colleges, currently numbering about 35, admit students graduating from grade 11 and offer three-year terminal technical programs

and two-year academic programs which are prerequisite for university entrance. Private or classical colleges offer the equivalent of the two-year university transfer program offered in the CEGEP, at the end of which successful students receive a *diplôme d'études collégiales*. Students may, however, continue at these establishments and work toward a degree granted by the university to which the college is affiliated.

There are at present four English-language CEGEPs in operation. McGill University, Sir George Williams University and Loyola College (now affiliated with Sir George Williams) also offer the equivalent two-year CEGEP program preceding the three-year university program, an interim arrangement pending the establishment of additional English-language CEGEPs. Nursing diploma (RN) programs are now carried out exclusively in the CEGEPs. Teachers' colleges still exist in Quebec but the trend is for teacher training to be given in the universities after completion of the academic program in the CEGEPs. There are several universities and colleges located in Quebec that offer a wide variety of degree, diploma and certificate programs.

Ontario. Under recent amendments to the Ontario School Act, county districts have replaced former individual units that were administered by three-member boards of trustees. The larger cities, such as Toronto and Ottawa, are excluded and operate their own school systems. Roman Catholic schools are given a choice. In most of Ontario the separate administration of elementary and secondary schools has been abolished and these schools are now administered by the same board. With each county administered by one board, there has been a drastic reduction from thousands of districts to less than 200. An important amendment to the Act in 1969 provides for schools for trainable retarded children to be established under the jurisdiction of a special divisional board of education.

Ontario has a 13-grade system (senior matriculation) with provision for kindergarten and pre-school enrolment. The predominant pattern of school organization consists of elementary school (kindergarten and grades 1-8) and secondary school (grades 9-13). A variation in this organization is the 6-3-4 pattern: elementary school (kindergarten and grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-13).

One of the latest developments is the employment of a "credit system" to cover the former grades 9-12 leading to the secondary school graduation diploma. This will provide more flexible schedule patterns with a view to greater freedom of student choice within an expanding range of subject offerings, even to the creation of "individual timetables" for students. A credit is defined as a course successfully completed, normally after 110 to 120 hours of scheduled time. The diploma (grade 12 standing) is awarded after the successful completion of a minimum of 27 credits.

High schools in this province offer double-option trade courses in the science, technology and trades programs, and double-option business courses in the business and commerce programs. There is also a two- or three-year occupational program to which some students may voluntarily return for a fourth year. There are also special one-year commercial and technical programs that follow grade 11 or 12.

In Ontario at the beginning of the 1967-68 school year, the former institutes of technology and the provincial vocational centres were incorporated into colleges of applied arts and technology known as CAATs. These colleges were set up in 20 regions to serve the needs of the communities at both the post-secondary and the occupational levels. While the CAATs were not designed to accommodate prospective university transfer students, the universities do accept first-class graduates from the two- or three-year post-secondary programs into the first- and second-year degree courses, respectively. On October 1, 1971 these institutions became the responsibility of the newly formed Department of Colleges and Universities. In addition to the regional schools of nursing and the hospital schools of nursing, Humber College and Ryerson Polytechnical Institute offer nurses' (RN) diploma programs. Eight independent teachers' colleges existed in Ontario in 1972-73 but it is assumed that a number of these will soon be integrated with the university system. There are over 20 universities and colleges in this province offering a diversified program of courses leading to degrees, diplomas and certificates.

Manitoba. In 1971-72 over 90% of public school enrolments in Manitoba came under the administration of 48 unitary division boards responsible for all public elementary and secondary education within their jurisdictions. In addition, there are some schools in the

remote areas of the province and other special schools that are not included in these 48 unitary division boards.

Public kindergarten classes are available in most elementary schools in Manitoba. Enrolments have almost tripled in the past 10 years as these facilities have been expanded and the number of children in private nurseries and kindergartens has consequently declined.

There are two major patterns of school organization in the 12-grade system to senior matriculation: elementary (kindergarten and grades 1-8) and high school (grades 9-12); or elementary (kindergarten and grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-12). Increased emphasis is being placed on open-area classrooms, higher qualifications for teachers, and improved curricula. Other innovations in the elementary and secondary schools include: more meaningful curricula for Indian and Métis children now incorporated into regular classes; emphasis on health programs in relation to alcohol and narcotics; audio-lingual programs in French and German at grade 10 level; and emphasis on continuous testing to replace formal examinations and on the concept of "independent study" for students in some secondary schools. Final examinations are set and marked under the auspices of the High School Examination Board of Manitoba. Entrance to university requires evidence of Board standing in at least three subjects with school standing acceptable in two other subjects.

In Manitoba, vocational students may take either a pre-employment commercial or industrial program, the successful completion of which entitles them to an "academic transcript". Alternatively, students may complete the university entrance program and continue for an additional year in a special commercial program, or those following the industrial program may spend half their time in the university entrance program. There is also an occupational entrance program commencing at grade 7 and continuing until grade 10 or 11, during which period students receive part of their training on the job in business or industry.

The Manitoba Institute of Technology and Applied Arts and the two vocational centres at Brandon and The Pas were designated as community colleges in the fall of 1969 and renamed Red River Community College, Assiniboine Community College and Keewatin Community College, respectively. These institutions offer both post-secondary terminal career programs and vocational courses at the trades level. Although no provision is made for university-transfer programs, graduates from the career programs have, in special circumstances, been granted credits applicable to a university program. Training for nurses qualifying them for the RN diploma is provided at Red River College as well as at five hospital schools.

Teacher training is offered only at the university level in this province. There are seven colleges and universities offering degree programs. The largest — the University of Manitoba — offers courses in arts and sciences, law, medicine, education, applied sciences, architecture and many other fields.

Saskatchewan. Many schools in the larger centres of Saskatchewan are now offering kindergarten classes, although elsewhere in the province such classes are not normally available. The proportion of five-year-olds attending pre-grade 1 classes within the publicly controlled school system has increased from about 15% in 1960-61 to 27% in 1971-72.

The traditional 12 elementary-secondary grades have been replaced by four divisions, each consisting of three years of school for a student making normal progress. In Divisions I and II, the principle of non-grading, involving the ideas of continuous progress and flexible promotion, has been adopted. Division III programs have been planned to meet the special needs of pupils in the 13- to 15-year-old age group faced with the problems of emerging adolescence. Division IV is undergoing major changes in the total scope of courses offered and in the content and methods used within particular subject areas. Recent amendments to the Saskatchewan School Act allow for the exclusion from the regular system of children mentally deficient and incapable of learning. Educable handicapped children attend special classes in regular schools; blind and deaf children between seven and 16 years of age are educated in special schools.

In Saskatchewan, vocational subjects may be taken in the general, industrial arts, commercial or special terminal programs, none of which qualify the student for university entrance. Vocational courses in the high schools were set up with a view to providing a closer articulation between those schools and the technical institutes. Most of the vocational students in grade 9, apart from those in the commercial course, take five shops not associated with any

one specific trade; similarly, students in grade 10 may take two shops. The Saskatchewan Institute of Applied Arts and Sciences and the Saskatchewan Technical Institute offer vocational courses only at both post-secondary and trades levels. The former has taken over the total responsibility for the nurses' (RN) diploma program, and in 1972 only one hospital school remained.

The University of Saskatchewan, at both the Regina and Saskatoon campuses, offers many degree programs.

Alberta. Education in Alberta is under constant review by the province's Commission on Educational Planning, charged with the broad task of predicting what Alberta society will be like educationally, socially and economically during the last decades of the 20th century. Innovations in recent years in the elementary-secondary level include: extensive experimentation in programs carried out at the local school level; the use of French as the language of instruction during 50% of the school day in grades 3-12 in certain schools; construction of modern buildings incorporating the latest design in instructional facilities; movement toward the semester system and other methods of dividing the school year; and implementation of school television projects. The province is organized into divisions for purposes of education and each division is administered by its own school board.

Kindergarten classes are not part of the provincial school system although some school boards, particularly those in the cities, do provide such classes. In addition, about 20% of five-year-old children are enrolled in privately operated nursery schools and kindergartens.

The two predominant patterns of school organization in Alberta are: elementary school (grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-12); or elementary school (grades 1-8) and high school (grades 9-12). Alberta operates its secondary schools on the composite or comprehensive principle. Most of the wide range of vocational programs conducted are offered in grades 10-12. In grade 12, some of the vocational courses lead to the granting of 15-20 credits, of which 100 are required for an Alberta High School Diploma.

In the fall of 1971, a new Department of Advanced Education was formed, separate from the Department of Education. This Department is responsible for universities, public colleges, institutes of technology and the agricultural and vocational colleges formerly under the jurisdiction of the Department of Agriculture. The five public colleges, previously known as "junior" colleges, the two institutes of technology and the three agricultural and vocational colleges, all offering vocational programs at the post-secondary level, are now part of the community college system.

Programs at the first- or second-year university level are provided at three church-related institutions: Camrose Lutheran College, the bilingual Collège St. Jean and the Canadian Union College which also offers two-year terminal vocational studies in secretarial science. Nurses' (RN) diploma programs are at present given at both hospital schools and four community colleges: Lethbridge, Medicine Hat, Mount Royal and Red Deer.

One large university, the University of Alberta, offers a variety of courses including fine and applied arts, arts and sciences, medicine, dentistry, pharmacy, nursing, household science, engineering and applied sciences, agriculture, library science, law and education. The province also has two other universities — the University of Calgary and the University of Lethbridge — and three small colleges.

British Columbia. Details of education programs in British Columbia are similar to those of the other provinces. Its central organization divides responsibility for curriculum, instruction, adult education, university and college affairs, research and standards, home economics, correspondence courses, school broadcasts, visual education, technical and vocational education, community programs, Jericho Hill School for the deaf and blind, and examinations.

British Columbia's former 13-year system of education, culminating in senior matriculation, is being replaced with a 12-year system but the senior matriculation year is still available in universities, in some of the regional colleges and in some high schools. The predominant pattern of school organization consists of elementary school (grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-12). Five of the six programs offered in grades 11 and 12 are vocationally oriented — commercial, industrial, community services including home economics (not specifically labour-force-oriented), visual and

performing arts, and vocational. There are a substantial number of pupils enrolled in special classes, such as those for educable retarded, blind or deaf children. In most school districts, the less severely handicapped receive special instruction in regular schools and the more severely handicapped are taught in special schools under government or private operation.

Ten community colleges and the British Columbia Institute of Technology have been established since 1965. The colleges, operated by consortiums of school boards, enable residents of a particular geographic area to take the junior years of university or a post-secondary terminal vocational course. Vancouver City College is operated by the Vancouver School Board only, and the British Columbia Institute of Technology, which offers post-secondary career programs only, is operated by the provincial Department of Education. Trinity Junior College is a church-related institution which provides the first two years of university. Columbia Junior College, a private non-denominational institution located in Vancouver, offers a terminal career course in fashion design as well as university transfer programs which are recognized by the University of British Columbia.

In addition to the hospital schools of nursing, the British Columbia Institute of Technology, Selkirk College and Vancouver City College offer the nurses' (RN) program and Vancouver City College provides specific training in psychiatric nursing.

The largest degree-granting institution in the province — the University of British Columbia — has faculties of architecture, law, medicine, applied sciences, education, arts and sciences and others. A major development for the 1970s, based on the report of the Commission on the Future of the Faculty of Education, is the revision of the academic program and administrative structure of this university's Faculty of Education. Among the 85 recommendations are such innovations as the adoption of a single five-year Bachelor of Education program, introduction of the "teaching associate" idea, a new Master of Pedagogy degree, and student participation in decision-making at the operational level. There are two smaller universities, Victoria and Simon Fraser, in British Columbia and a number of small colleges, most of them church-related.

Yukon Territory. The Yukon Territory school system is administered by the Yukon Department of Education and operated through a superintendent and staff at Whitehorse, appointed by the territorial government and responsible to the Commissioner of the Territory. Schools in the Yukon Territory have always been publicly controlled, except for the federal Indian Residential School at Carcross which closed before the 1969-70 school year.

Northwest Territories. The Northwest Territories school system, consisting of the districts of Mackenzie, Franklin and Keewatin, is operated by the Department of Education of the territorial government. The official transfer of responsibility for education from the federal Department of Indian Affairs and Northern Development to the territorial Department of Education occurred in April 1969 in the Mackenzie District and April 1970 in the Franklin and Keewatin districts; 58 schools came under the control of the territorial Department, in addition to several schools already under its control.

The territorial Department of Education is continuing the work done in the past by the Department of Indian Affairs and Northern Development, and is providing educational opportunities for northern residents equivalent to those enjoyed by citizens in southern Canada. New schools have been constructed at Edzo, Frobisher Bay, Baker Lake, Cape Dorset, Coral Harbour and Clyde River and an education curriculum has been developed relevant to the cultural heritage of Eskimo, Indian and Métis students, who make up the majority of pupils in the schools. The Department, with the assistance of the Department of Indian Affairs and Northern Development, is initiating the collection of stories and legends of the Dogrib people and a Dogrib grammar and a dictionary are being produced.

7.1.4 Education of Indians and Inuit

Indians. The number of Indian students enrolled in pre-vocational courses during 1972-73 increased to 4,503 from 3,962 in 1971-72. During the same period there were similar increases in university enrolments, from 559 to 911, and in teacher training from 63 to 104. Professional training enrolments increased from 562 to 1,368. Indian history, traditions and languages are now included in the curriculum, and native culture is stressed through language, visual aids, tapes and printed matter as well as Indian dances and arts.

In January 1973, 71,319 Indian children were enrolled in pre-school, elementary or secondary school classes in federal or provincial schools. The pre-school program for four- and five-year-olds received special emphasis. There was a 2.1% increase in pre-school enrolment, and a 4% increase in secondary school enrolment. Federal financial assistance for Indian students attending non-federal schools varies from payment of tuition fees and provision of school buses, many of them operated by band councils or Indian contractors, to full maintenance either in boarding homes or student residences, which during the year accommodated 11,000 Indian students unable to attend local schools because of isolation or other reasons.

Federal schools for Indian students are in operation in all provinces except Newfoundland. During 1972-73, 22 major capital projects were under construction or had been completed, providing the federal school system with a total of 112 new classrooms, seven gymnasiums and 42 staff units. The total cost of the federal schools construction program was in excess of \$11 million. A further \$5 million was spent for classroom space in provincial schools attended by Indian students.

Inuit (Eskimos). In 1972-73, 4,600 Inuit pupils were enrolled in school in the Northwest Territories compared with only 451 out of a total of 2,000 pupils in 1955. There are 69 settlements in the Northwest Territories, 32 of which are Inuit settlements; of the 58 schools, 30 are in Inuit settlements. Kindergarten classes are provided in 35 of these schools, 22 of them in Inuit settlements.

Throughout the Northwest Territories education is a responsibility shared by the federal and territorial governments and administered by the Department of Education of the Northwest Territories. In April 1969 the territorial government assumed responsibility for the administration of education in the Mackenzie District, and a year later took over the same responsibility for the eastern Arctic district. The responsibility for education of the Eskimos in Arctic Quebec remains with the Department of Indian Affairs and Northern Development.

In 1973 Eskimo was available for the first time as a language of instruction in a few communities, and was offered as a subject in several others.

The Continuing and Special Education Division of the Department provides for all educational and training activities not contained within the formal elementary and secondary school systems.

Vocational education programs, including apprenticeship, are designed to train people for either wage employment or self-employment in specific occupations. Apprenticeship continues to be the most effective program for the development of trades people; manual skills are learned on the job where close watch is kept to assure that the apprentice is receiving work experiences in all available trades practice. In addition, each indentured apprentice receives six to eight weeks of full-time trade theory training in an in-school situation during each year of his apprenticeship.

It will be some time before an extensive university program is offered in the North. The University of Saskatchewan now offers courses in its research centre at Rankin Inlet, and the University of Alberta has expanded its program in the Mackenzie area, offering courses at Fort Smith, Yellowknife and Inuvik.

7.1.5 Financing education

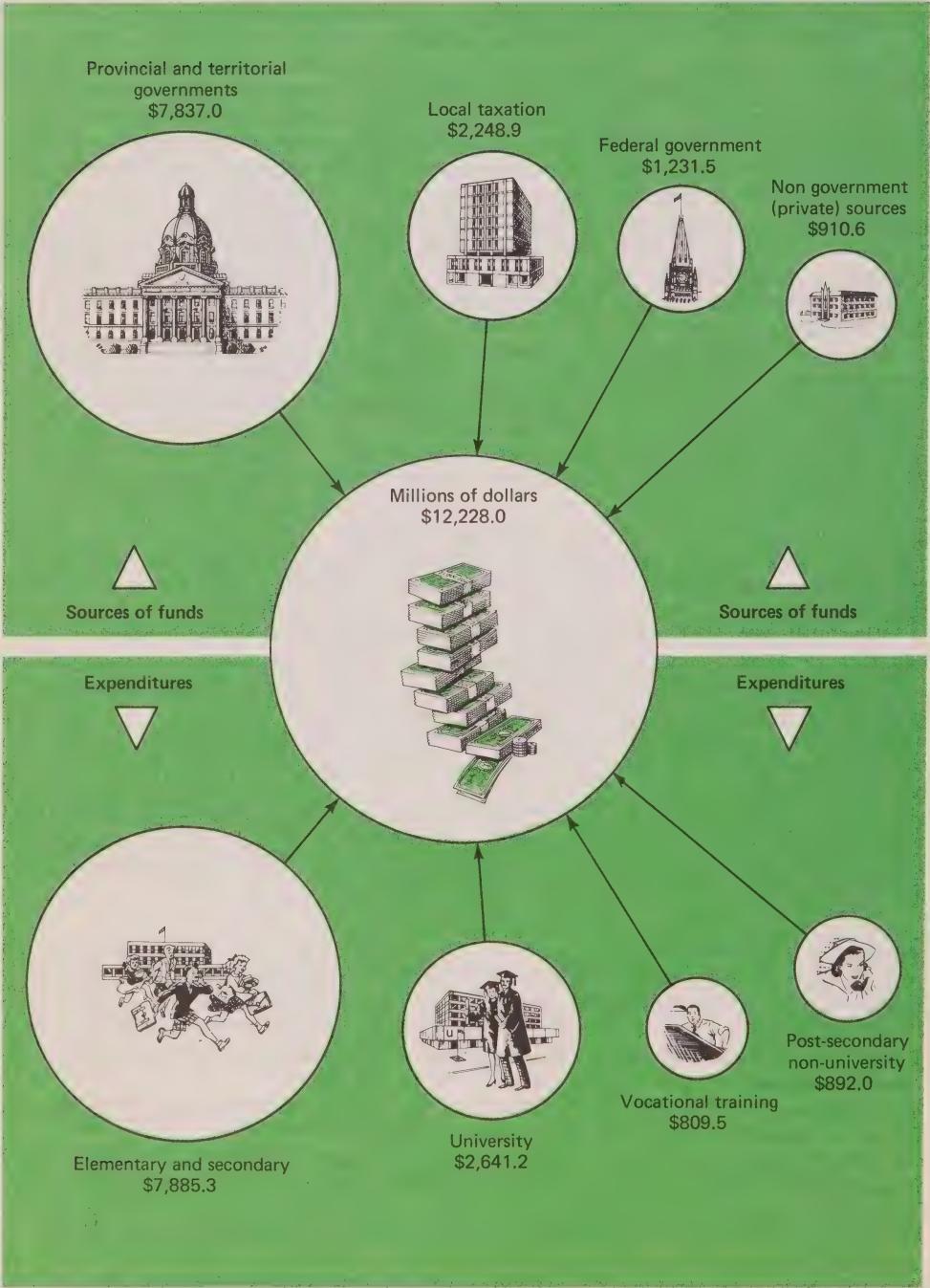
Of the total expenditures on education across Canada amounting to an estimated \$8,784.7 million in 1972, local governments contributed 21.8%, provincial governments 60.3%, the federal government 10.1% and the remaining 7.8% originated from fees and other sources.

Local and provincial education. The magnitude of the elementary-secondary sector of education is most clearly evident when expressed in dollars. In 1971 and 1972, total expenditures at this level were \$5,456 million and \$5,834 million, respectively, these amounts representing about 66% of all expenditures for all education in Canada.

The actual operation of public elementary and secondary schools is in the hands of the local elected or appointed school boards which determine the budgets and therefore the amount of taxes required for school purposes. In most cases, these taxes are levied and collected for the boards by the municipalities; however, in those areas where there is no municipal organization the school boards have the power to levy and collect taxes for school purposes. In the calendar year 1972 local governments provided 40% of the cost of operating

Sources of funds and expenditures
for education, Canada, 1975-76

Millions of dollars



school boards, and provincial governments 58%. The remainder was obtained from fees (less than 0.5%) and various other sources (about 1%). Four provinces — British Columbia, Alberta, Manitoba and Nova Scotia — pay operating grants on an equalization formula and thus ensure at least a minimum level of education throughout the province. The standard is determined either in terms of so much per pupil, or from an established salary scale for teachers with a prescribed teacher-pupil ratio, or by some combination of these.

In Newfoundland where municipal organization scarcely exists outside certain larger centres, there are three school-tax areas. In Prince Edward Island where there is no municipal organization except in the cities of Charlottetown and Summerside, the school boards levy and collect property and poll taxes but the province provides about two thirds of the operating costs. Ontario and Saskatchewan make use of various equalization and incentive grants. On January 1, 1967, the New Brunswick government introduced a Program of Equal Opportunity under which it assumed full responsibility for public education and other social services. Consequently, in the following years the revenue used for public education was derived almost entirely from provincial taxes (real property and sales taxes); the rest came from miscellaneous sources. Most provinces provide grants for school buildings and equipment, establish loan funds, guarantee debentures for school purposes and assist in selling them.

The creation of a financial reporting system which ensures comparability between the provinces and timeliness of output has been difficult. However, reasonably accurate comparable cost-per-pupil data for each of the provinces at the elementary-secondary level are now available. Differences in accounting procedures create difficulties but, for the most part, they can be coped with. It must be remembered that the number of students being dealt with in all cases is extremely large, and the expenditure items on which consistency is difficult to achieve across all provinces are always relatively minor in relation to the provincial total.

In the past, reliance was placed entirely on audited statements and published public accounts for all data; this resulted in delays that sometimes exceeded 30 months between the termination of an academic year and the publication of national information on schooling costs in Canada. However, provincial departments of education are now providing budgets and other information which will make it possible to have financial estimates available sooner.

The determination of more accurate educational costs on a current basis has enabled the federal government to provide significant sums of money (\$70.1 million in 1972-73) to the provinces to further the aims of bilingualism. A fixed percentage of the cost-per-pupil of elementary-secondary education is paid to each province, based on their costs, for the amount of minority language education provided and the time devoted to teaching the second language.

The importance of adequate statistics in order to plan and maintain a program of education support cannot be over-emphasized. An excellent data base already exists and it is constantly being refined and improved. The use of education statistics in order to establish and maintain programs designed to meet national and regional aims is now a genuine possibility, and could be put to immediate use.

Financial data (along with enrolment and teaching staff statistics) form an integral part of a developing nation-wide information system which was initiated by the Council of Ministers of Education in Canada but has been carried on by the Education Division of Statistics Canada since 1969. In addition, other initiatives have been taken to round out the statistical picture. In 1971, a survey was undertaken on school transport to provide national and provincial data on a number of aspects of this particular education phenomenon, on which very little information has ever been available; results of the survey were published in mid-1974. Recent moves in nearly all provinces to consolidate both administrative and education services into large units have resulted in significant increases in pupil transportation services which, it appears, now absorb from 3% to 10% of school board budgets.

Federal contributions to education. In 1971-72, universities and colleges received more than 78% of their operating funds from the federal and provincial governments. Private schools and colleges are normally supported by student fees, endowment income, gifts and income from sponsoring bodies.

In 1971-72, federal government expenditures on education amounted to an estimated \$928 million excluding monies transferred to provinces under the terms of the Federal-

Provincial Fiscal Arrangements Act; of this, some \$256 million was spent at the university level, and expenditures on non-university post-secondary education, including vocational training, amounted to \$462 million. Finally, direct expenditures by the federal government on elementary-secondary education and teacher training accounted for \$210 million.

Some 66 federal government departments and agencies contribute to education in one way or another. The federal government has no responsibility for the organization and administration of education but it does have a vital interest in the availability of education, the skills of the population and the extent of scientific research carried on in Canada, realizing the effect of these on the national economy and on individual and social development.

During the past few years, federal support to education has undergone significant change. As a result of the federal-provincial conference of October 1966, the federal government undertook to provide increased support to education. Recognizing that education is a provincial responsibility, it decided to discontinue payment of operating grants directly to universities and to expand its support beyond university education and included in its program all, or almost all, post-secondary education, i.e. the educational institutions and courses requiring for admission at least junior matriculation, or its equivalent, in each province. The provinces were offered the choice of either a federal per capita grant of \$15 based on population or 50% of operating costs of post-secondary education, whichever was greater. Implementing this proposal, Parliament passed the Federal-Provincial Fiscal Arrangements Act in March 1967. This Act authorized the transfer of specific percentages of federal revenue plus required cash from the federal treasury to the provinces for a five-year period commencing with the 1967-68 fiscal year.

The financial resources transferred to the provinces were \$422 million in 1967-68; for succeeding years they were \$530 million in 1968-69, \$654 million in 1969-70, \$786 million in 1970-71, \$880 million in 1971-72, and \$987 million in 1972-73. The amount to be transferred to the provinces in 1973-74 was estimated at \$1,067 million.

Under the Adult Occupational Training Act the federal government, through the Department of Manpower and Immigration, provides occupational training to adults who are or plan to be members of the labour force. If, in the opinion of a manpower counsellor at a Canada Manpower Centre, it is in the best interest of the individual and of the economy for an adult to undertake training or retraining, the person may be placed in a training place purchased by the federal government from a public or private training institution or from industry. The program also provides for payment of allowances to persons whose training programs have been arranged by a manpower counsellor. Payments range between \$40.00 and \$128.00 a week, depending on the individual's economic responsibilities.

Under the Canada Student Loans Act (RSC 1970, c.S-17), full-time students may borrow up to \$1,400 annually to a total of \$9,800. Loans are interest-free while the student is enrolled and for six months thereafter. Provision is made for the total amount allocated to this program to be increased year by year in proportion to the increase in enrolment in post-secondary institutions. The purpose of the loan plan is to assist those students who, for financial reasons, would otherwise be prevented from acquiring a post-secondary education or would not be able to devote full-time to their studies. These loans may be made only on the basis of certificates of eligibility issued by the participating province. There is no upper or lower age limit for eligibility. Funds authorized by certificates of eligibility are issued by the chartered banks, the federal government guaranteeing the loans and paying the interest while the student is attending college. All provinces except Quebec participate; Quebec offers its own student assistance program for the benefit of residents of that province.

The Act provides for basic allocations for each province and also for supplementary allocations to compensate for differences in relative demand between provinces, based on provincial population in the 18-24-year age group. The basic allocations for the year 1971-72 for participating provinces totalled \$87.3 million with authority for discretionary allocations up to \$37.6 million, making a total maximum of \$124.9 million authorized under the Act. Loans actually authorized amounted to \$91.8 million. In addition, federal payments to lending institutions in respect of interest on outstanding loans and other operational expenses amounted to \$23.3 million.

In 1966, the federal government inaugurated a program of massive financial support to the provinces to provide badly needed facilities for training professional personnel in health services. The Health Resources Fund Act (RSC 1970, c.H-4), administered by the Department of National Health and Welfare, authorized the establishment of a fund to assist financially in the planning, acquisition, construction, renovation and equipping of health training facilities, defined to mean any school, hospital or other institution for the training of persons in the health professions or any occupations associated with the health professions, or for conducting research in the health field; residential accommodation was excluded. The Fund was established in the amount of \$500 million, to be applied to costs incurred between January 1, 1966 and December 31, 1980; of that amount, \$400 million is available to the provinces on a per capita basis, \$25 million is available to the four Atlantic provinces for joint projects, and \$75 million remains to be allocated by the Governor in Council. Contributions are payable to the provinces in amounts of up to 50% of the cost of projects approved by the Minister's Advisory Committee as part of a five-year plan for the development of health training facilities in a province.

During the first five years of operation of this program, 1966-67 to 1970-71, the federal government paid \$143.2 million to the provincial treasuries in respect of approved projects. Projects financed under this program included training facilities in universities or institutions connected with, or operated by, schools of medicine, schools of nursing, including new regional schools of nursing in Ontario, and schools for nursing assistants, as well as facilities for vocational types of training at the higher educational levels.

Through the Canada Council, the federal government in 1957 provided an amount of \$100 million, half of which was to be distributed among the universities for specified building and equipment purposes, similar to the distribution of grants. Interest from the remaining \$50 million was to be used to assist in the development of the arts, humanities and social sciences, mainly through scholarships (see Section 7.3.3).

Other contributions are more indirect and include scholarships, research grants and reports or services of value to the schools. Research grants are made by the National Research Council, the Defence Research Board, the Department of National Health and Welfare, the Department of Manpower and Immigration and other agencies. Some departments — Agriculture and National Health and Welfare, among others — provide materials and publications of value in the school programs; and the National Museums of Canada, the National Gallery, the National Film Board and the Canadian Broadcasting Corporation contribute directly or indirectly to various school programs.

More directly, the federal government is responsible for the education of Indians, members of the Armed Services and their dependents, and in-service training for permanent personnel and inmates of federal penitentiaries. It also assists in citizenship training and other out-of-school informal education activities.

External education assistance. The Canadian International Development Agency is responsible for the operation and administration of the technical assistance program offered by the Canadian government to developing countries. The International Development Research Centre, Canadian-financed but international in character, supports and assists research into the economic and social problems faced by developing countries. The activities of both organizations are described in Chapter 3.

7.2 Statistics of schools, colleges and universities

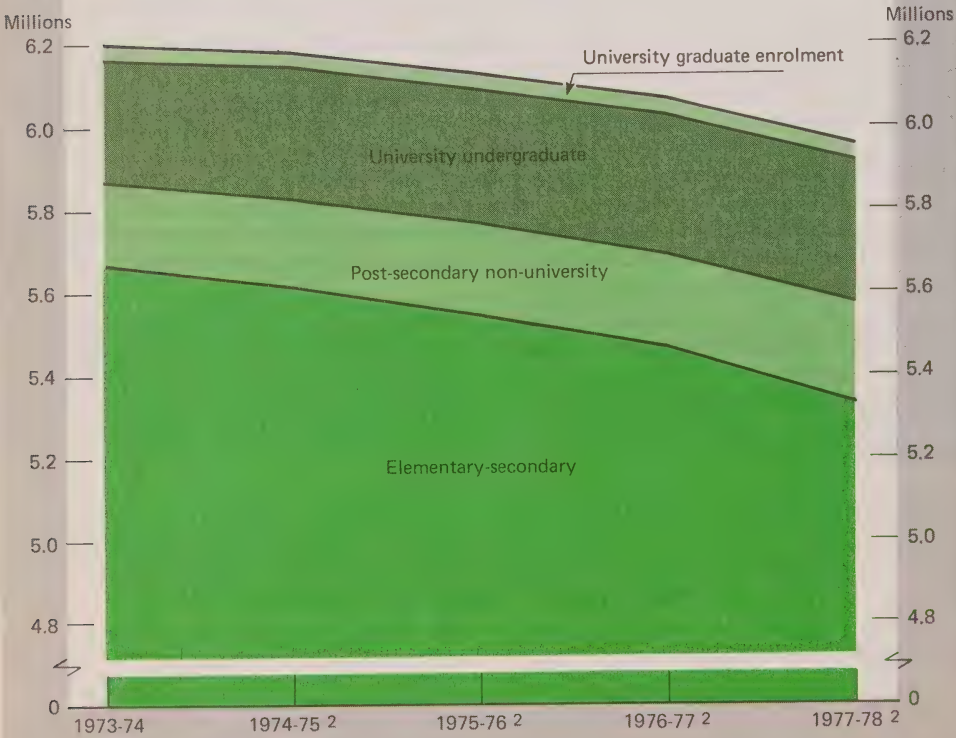
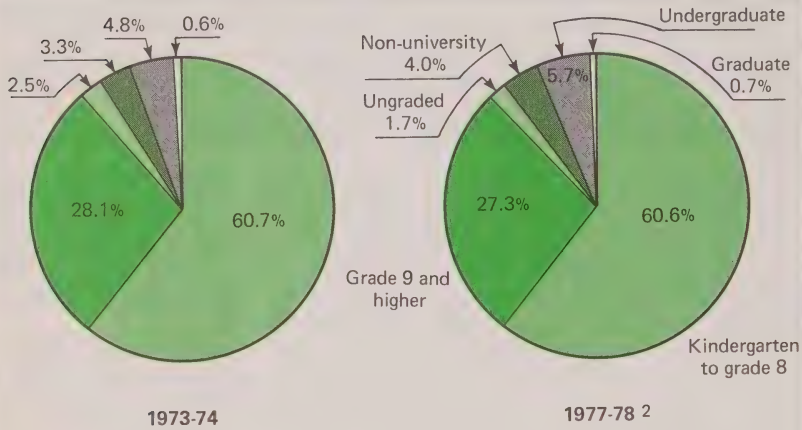
Statistics of enrolment at the three levels of education, degrees granted, participation in continuing education courses and non-credit courses, salaries and expenditures for various years up to 1972-73 are carried in the *1974 Canada Year Book* pp 269-272.

7.3 Cultural education

7.3.1 Art schools and galleries

There has been considerable expansion of education opportunities in the arts in Canada in the past few years. Courses of artistic content have increased to some extent in the universities but the main growth has taken place in the newly established community colleges of Ontario and the collèges d'enseignement général et professionnel (CEGEPs) of Quebec. These colleges

Total full-time institutional enrolment ¹ Canada, percentage distribution, 1973-74 and 1977-78 and numerical distribution, 1973-74 to 1977-78



1.Excludes blind and deaf.

2.1974-78: projected enrolment.

offer both the transfer diploma which allows the student to continue his studies at university, and the vocational diploma with which the student may seek employment in his area of specialty. There are also independent institutions, such as the Artists' Workshop in Toronto, the National Theatre School in Montreal and the Kootenay School of Art in Nelson, BC, where instruction is given with or without diploma awards.

Table 7.1 shows the number of museums, art galleries and related institutions in Canada for 1972.

7.3.1.1 Fine arts schools, galleries and organizations

Fine arts (architecture, painting and drawing, commercial and decorative arts, graphics, ceramics and sculpture) appears as an elective subject of the faculty of arts in a number of universities, where it may be taken as one of five, six or more subjects for a year or two. Twelve universities offer a Bachelor of Fine Arts degree: University of Alberta, University of British Columbia, University of Calgary, University of Lethbridge, Concordia University, University of Manitoba, Mount Allison University, Nova Scotia College of Art and Design, Université du Québec, University of Regina, University of Saskatchewan and St. Thomas More College, and University of Victoria. Fourteen universities offer a Bachelor of Arts degree with a major in Fine Arts: University of Guelph, Concordia University, McGill University, McMaster University, Université de Moncton, Notre Dame University of Nelson, University of Ottawa, Queen's University, University of Toronto, University of Waterloo, University of Western Ontario, Wilfrid Laurier University, University of Windsor and York University. Seven universities offer a Master of Fine Arts degree: University of Alberta, University of British Columbia, Concordia University, University of Regina, University of Saskatchewan, University of Victoria and York University. Two universities offer a Doctorate in Fine Arts: University of British Columbia and University of Victoria.

There are many colleges and schools of art with varying academic requirements for admission. These offer diploma or certificate courses and are concerned largely with the technical development of the artist. Among those widely known are Halifax — Nova Scotia College of Art; Quebec City — École des Beaux-Arts; Montreal — École des Beaux-Arts, Institut des Arts Appliqués, School of Art and Design of the Montreal Museum of Fine Arts; Toronto — Humber College of Applied Arts and Technology, Ontario College of Art, Artists' Workshop, Hockley Valley School, The New School of Art; Brampton — Sheridan College of Applied Arts and Technology; Kitchener — Doon School of Fine Arts; Winnipeg — University of Manitoba School of Art; Regina — School of Art, University of Regina; Banff — Banff School of Fine Arts; Calgary — Alberta College of Art, Southern Alberta Institute of Technology; Nelson — Kootenay School of Art; Vancouver — Capilano College, Vancouver School of Art; Victoria — University of Victoria.

Courses vary in length with the requirements of the individual student but may extend over as many as four years. In some of these schools fine crafts as well as fine arts are taught. Summer schools of art are sponsored by some of the foregoing institutions, by universities and by various independent groups. One of the more important summer schools is the Banff School of Fine Arts, affiliated with the University of Calgary.

Public art galleries in the principal cities perform valuable educational services among adults and children. Children's Saturday classes, conducted tours for school pupils and adults, radio talks, lectures and concerts are features of the programs of the various galleries. Many of these institutions supply travelling exhibitions for their surrounding areas or range even farther afield. Several organizations such as the Maritime Art Association, the Atlantic Provinces Art Circuit, the Western Canada Art Circuit, the Art Institute of Ontario, the Art Gallery of Ontario and the new Fédération des centres culturels du Québec have been founded to carry out this sort of travelling program on a regional basis. On a smaller scale, art circuits are organized to serve certain areas such as those around St. John's, Nfld., Charlottetown, PEI, Trois-Rivières and Hull, Que., and Winnipeg, Man. The National Gallery of Canada conducts a nation-wide program of this nature and is one of the largest art circulating agencies in North America. Several galleries maintain an art rental service.

Among the principal public art galleries are:

Confederation Art Gallery and Museum, Charlottetown, PEI
Beaverbrook Art Gallery, Fredericton, NB
Musée du Québec, Quebec, Que.

Musée d'Art Contemporain, Montreal, Que.
 National Gallery of Canada, Ottawa, Ont.
 Art Gallery of Ontario, Toronto, Ont.
 Art Gallery of Hamilton, Hamilton, Ont.
 Art Gallery of Brant, Brantford, Ont.
 Cobourg Art Gallery, Cobourg, Ont.
 The McMichael Collection of Art, Kleinburg, Ont.
 The Robert McLaughlin Gallery, Oshawa, Ont.
 Tom Thomson Memorial Gallery and Museum of Fine Art, Owen Sound, Ont.
 Art Gallery of Windsor, Windsor, Ont.
 Kitchener-Waterloo Art Gallery, Kitchener, Ont.
 Public Library and Art Museum, London, Ont.
 Sarnia Public Library and Art Gallery, Sarnia, Ont.
 Brandon Allied Art Council, Brandon, Man.
 Winnipeg Art Gallery, Winnipeg, Man.
 Moose Jaw Centennial Art Museum, Moose Jaw, Sask.
 Saskatoon Gallery and Conservatory Corporation, Saskatoon, Sask.
 Dunlop Art Gallery, Regina Public Library, Regina, Sask.
 Saskatchewan Power Corporation Art Gallery, Regina, Sask.
 Edmonton Art Gallery, Edmonton, Alta.
 Calgary Allied Arts Centre, Calgary, Alta.
 Glenbow-Alberta Institute Art Gallery, Calgary, Alta.
 Burnaby Art Gallery, Burnaby, BC
 Vancouver Art Gallery, Vancouver, BC
 Art Gallery of Greater Victoria, Victoria, BC

Other important collections of art are housed in arts councils and university galleries.

Among the university galleries are:

St. John's Memorial University Art Gallery, St. John's, Nfld.
 Acadia Students' Union Art Gallery, Wolfville, NS
 Anna Leonowens Gallery, Nova Scotia College of Art, Halifax, NS
 Mount Saint Vincent University, Halifax, NS
 Saint Mary's University Art Gallery, Halifax, NS
 Dalhousie University Art Gallery, Halifax, NS
 Creative Art Centre of the University of New Brunswick, Fredericton, NB
 Owens Museum of Fine Arts, Mount Allison University, Sackville, NB
 Université de Moncton, Moncton, NB
 Le Galerie d'art, Université de Sherbrooke, Sherbrooke, Que.
 Séminaire des Clercs de St-Viateur, Joliette, Que.
 Galerie d'art Nova et Vetera Kébec, Collège de Saint-Laurent, Montreal, Que.
 Concordia University Art Gallery, Montreal, Que.
 Agnes Etherington Art Centre, Queen's University, Kingston, Ont.
 Canadiana Department of the Royal Ontario Museum, Toronto, Ont.
 York University, Toronto, Ont.
 McMaster University Art Gallery, Hamilton, Ont.
 University of Waterloo Art Gallery, Waterloo, Ont.
 McIntosh Memorial Art Gallery, University of Western Ontario, London, Ont.
 University of Manitoba, Winnipeg, Man.
 Norman Mackenzie Art Gallery of the University of Saskatchewan, Regina, Sask.
 University of Saskatchewan, Saskatoon, Sask.
 University of Alberta, Edmonton, Alta.
 University of Calgary, Calgary, Alta.
 Alberta College of Art Gallery, Southern Institute of Technology, Calgary, Alta.
 University of Lethbridge Art Gallery, Lethbridge, Alta.
 Fine Arts Gallery of the University of British Columbia, Vancouver, BC
 The Simon Fraser Gallery, Simon Fraser University, Burnaby, BC
 Kootenay School of Art Gallery, Nelson, BC.

Five of the more important galleries connected with arts councils are the St. Catharines and District Arts Council, St. Catharines, Ont., the Glenhyrst Arts Council, Brantford, Ont., the Department of Fine Arts, McMaster University, Hamilton, Ont., the Brandon Allied Arts Centre, Brandon, Man., and the Art Gallery of the Calgary Allied Arts Centre, Calgary, Alta.

Among the leading fine arts organizations of national scope, exclusive of museums and art galleries, are: Association of Canadian Industrial Designers, National Design Council,

Canadian Conference of the Arts, Canadian Craftsmen's Association, Canadian Society for Education through Art, Canadian Group of Painters, Canadian Guild of Potters, Canadian Handicrafts Guild, Canadian Museums Association, Canadian Society of Graphic Art, Canadian Society of Painter-Etchers and Engravers, Canadian Society of Painters in Water Colour, Canadian Society of Landscape Architects, Federation of Canadian Woodcarvers, Royal Canadian Academy of Arts, Royal Architectural Institute of Canada, Sculptors' Society of Canada, Town Planning Institute of Canada, Canadian Centre for Films on Art, and Community Planning Association of Canada.

7.3.1.2 Performing arts schools

Degree courses in music, the most widespread of the performing arts (which also include opera, drama, ballet and dance) are offered at a number of Canadian universities, listed as follows:

St. Francis Xavier University, Antigonish, NS — BA major
 Dalhousie University, Halifax, NS — BMusEd
 Mount Saint Vincent, Halifax, NS — BA (mus.)
 Acadia University, Wolfville, NS — BA major, LMus and BMus
 Mount Allison University, Sackville, NB — BA major, BMus, BMEd
 Université de Moncton, Moncton, NB — BA (mus.)
 Concordia University, Montreal, Que. — BA (mus.)
 Université Laval, Quebec, Que. — LMus, BMus, DMus
 McGill University, Montreal, Que. — LMus, BMus, MMA (musical arts)
 Université de Montréal, Montreal, Que. — LMus, BMus and DMus
 Carleton University, Ottawa, Ont. — BA (mus.)
 Queen's University, Kingston, Ont. — BMus, BA major
 University of Toronto, Toronto, Ont. — BMus, BA (mus.), ArtDipMus, LicDipMus, MusBac (performance), MusBac (history, literature, composition, education), MusM, MA (musicology), MusDoc, PhD (musicology)
 McMaster University, Hamilton, Ont. — MusBac
 University of Western Ontario, London, Ont. — BA major, MusB, MA (musicology), and MusM
 University of Windsor, Windsor, Ont. — BA (mus.) and BMus
 University of Manitoba, Winnipeg, Man. — BA major, AMM, LMM and BMus
 Brandon University, Brandon, Man. — BMus (education or performance)
 University of Saskatchewan, Regina, Sask. — AMus, LMus, BMus, BMusEd
 University of Saskatchewan, Saskatoon, Sask. — BA major, BMus, BMusEd
 University of Lethbridge, Lethbridge, Alta. — BA (mus.)
 University of Alberta, Edmonton, Alta. — BMus and MMus
 University of Calgary, Calgary, Alta. — BMus
 University of British Columbia, Vancouver, BC — BA major, BMus and MMus
 University of Victoria, Victoria, BC — BMus, MMus, PhD (mus.).

Advanced instruction in music is also given at the Conservatoire de Musique et d'Art Dramatique in both Montreal and Quebec. Opera may be studied at the Royal Conservatory Opera School of the University of Toronto where advanced students work in close collaboration with the Canadian Opera Company and also at the Conservatoire de Musique et d'Art Dramatique and at the Banff School of Fine Arts (summer) at Banff, Alta., an affiliate of the University of Calgary.

Degree courses in drama are offered at the following universities:

Université de Moncton, Moncton, NB — BA (art dramatique)
 Concordia University, Montreal, Que. — BFA (drama)
 Queen's University, Kingston, Ont. — BA (drama)
 University of Toronto, Toronto, Ont. — MA (drama)
 University of Windsor, Windsor, Ont. — BA (drama), BFA (dramatic art)
 University of Saskatchewan, Regina, Sask. — BFA (drama)
 University of Saskatchewan, Saskatoon, Sask. — BA (drama), MA (drama)
 University of Alberta, Edmonton, Alta. — BA (drama), MA (drama), BFA (drama), MFA (drama, design or directing)
 University of Calgary, Calgary, Alta. — BFA (drama)
 University of British Columbia, Vancouver, BC — BA (theatre), MA (theatre)
 University of Victoria, Victoria, BC — BFA (theatre).

Advanced instruction in drama is also given during the summer at the Banff School of Fine Arts. The National Theatre School of Canada offers complete practical training for talented students; it is bilingual, courses being held at Montreal, Que., from October to June. Three years are required for the acting course and two for technical and production studies.

The National Ballet School at Toronto is the only residential ballet school in Canada. It offers academic studies together with practical instruction. Professional instruction is also offered by two other major Canadian ballet companies, Les Grands Ballets Canadiens, Montreal, and the Royal Winnipeg Ballet, Winnipeg, and advanced ballet training is given during the summer at the Banff School of Fine Arts.

7.3.2 Museums

The museums of Canada, as elsewhere, range from small collections of locally-gathered historical artifacts and objects to large government-operated institutions which collect, classify and display such objects as may be useful to the study and teaching of natural history, human history, science and technology, with special but not exclusive reference to Canada. Many of these larger museums, especially the components of the National Museums of Canada and the Royal Ontario Museum, have a long, distinguished heritage in research and publication of scholarly works and are important educational and cultural centres. They offer many educational services to the public through exhibits, guided tours, lectures and scientific and popular publications.

7.3.2.1 Educational programs

In 1972, 372, or 43.8%, of all museums and related institutions in Canada maintained educational programs. The following museums have staff members who are specifically charged with organizing programs in education and providing extension services: Nova Scotia Museum, Halifax, NS; McGill University museums, Montreal, Que.; National Museums of Canada, Ottawa, Ont.; Royal Ontario Museum, Toronto, Ont.; and Saskatchewan Museum of Natural History, Regina, Sask.

Other museums that conduct educational and extension programs using the regular curatorial and administrative staff are: The New Brunswick Museum, Saint John, NB; Musée du Québec, Quebec, Que.; Manitoba Museum of Man and Nature, Winnipeg, Man.; British Columbia Provincial Museum, Victoria, BC.

Direct work with schools may involve the holding of classes within the museum or visits of museum lecturers, with exhibits, to the schools. More informal are the guided tours for visiting school classes, loans of specimens, slides, filmstrips or motion picture films to schools, and the training of student-teachers in the educational use of the museum. For children, a number of museums have special programs not directly associated with school work including Saturday lectures and film showings, activity groups, nature clubs and field excursions. At the higher educational level, museum field parties provide research training to university students in many disciplines and museum staffs act as professional consultants, answer a host of inquiries on scientific and technical subjects, and serve as consultants or advisers to foreign scholars and institutions. There were 350, or 41.2%, of the museums and related institutions conducting research related to collections in 1972.

For adults, museums offer lectures, film shows and guided tours, the latter usually available throughout the year. Staff members may give lectures to service clubs, church groups, parent-teacher associations and hobby clubs. The latter, such as naturalists' groups, mineral clubs and astronomy societies, may be allowed to use the museum as their headquarters. Travelling exhibits are prepared for showing at local fairs, historical celebrations and conventions. Some Canadian museums have conducted regular radio or television programs and others have made occasional contributions. Some historical museums stage annual events during which the arts, crafts or industries represented by the exhibits are demonstrated to the public.

A survey of attendance at these institutions was completed by Statistics Canada for the year 1972. Some 43.8 million visits were made to 850 Canadian museums, art galleries and related institutions, including the National Museums of Canada; of these, 4.2 million were in groups arranged by schools, churches and other organizations. The institutions were staffed by 3,940 full-time and 4,119 part-time employees, and 6,825 volunteers. Their operating expenditures were \$58.8 million, and only 34.6% charged admission fees.

7.3.2.2 National Museums of Canada

The responsibilities of a museum include collecting, preserving and storing objects related to the various disciplines within its area of activity. Of equal importance is the research carried out by specialists in these fields and the publication of their findings. Museums exhibit artifacts from their collections in attractively designed displays to illustrate the scientific origins of the various subjects. Lectures, publications, inquiries, consultations, workshops, guided tours for children and adults, travelling exhibits, loans, library services and radio and television programs are also part of the National Museums' programs.

In 1972 the National Museums of Canada, a Crown corporation including the National Gallery of Canada, the National Museum of Science and Technology, the National Museum of Man and the National Museum of Natural Sciences, was charged with the administration of the National Museum Policy. This Policy is intended to provide Canadians with better access to the objects, collections and exhibits that form part of the Canadian cultural heritage through the decentralization and democratization of exhibitions.

The Policy involves small and large museums in all regions of the country. Smaller institutions are encouraged to upgrade their receiving and exhibition facilities so that they may exhibit a range of travelling exhibits and collections from other institutions. The Policy also provides for the development of exhibition space, either through mobile display units or by building new display facilities, in remote localities which have not previously been served by a museum or art gallery.

Implementation of the National Museum Policy is carried out under 11 programs: associate museums, national exhibition centres, special grants, training assistance, catalogue assistance, emergency purchase fund, education and extension, national loan collection, museummobile, national inventory, and conservation. For these 11 programs, \$1.1 million was provided to initiate the Policy in 1972-73 and \$13.4 million to continue in 1973-74.

The Board of Trustees of the National Museums of Canada created a Consultative Committee on National Museum Policy, chaired by the Vice-Chairman of the Board and consisting of two representatives from the Secretary of State Department, a representative of the Canada Council, two members appointed by the Chairman of the Board from nominees submitted by the Canadian Museums Association and two members similarly appointed from the Canadian National Committee for the International Council of Museums.

In addition to this a Secretariat to the Consultative Committee on National Museum Policy has been established within the National Museums of Canada which assists the Consultative Committee and the Board of Trustees in carrying out the first eight of these programs. The Corporation also operates the museummobile, which is a travelling caravan to bring museum exhibits to remote communities, and administers the National Inventory, which holds computerized data on all museum collections across the country. The Canadian Conservation Institute has responsibilities for the conservation and restoration program.

The early history of the National Museums is described in the *1972 Canada Year Book* pp 418-419. Recent activities of the museums are outlined below.

The National Gallery of Canada. The beginnings of the National Gallery of Canada are associated with the founding of the Royal Canadian Academy of Arts in 1880. The Marquis of Lorne, then Governor General, had recommended and assisted in the founding of the Academy and among the tasks he assigned to that institution was the establishment of a National Gallery at the seat of government. Until 1907 the National Gallery was under the direct control of a Minister of the Crown but in that year, in response to public demand, an Advisory Arts Council consisting of three persons outside government was appointed by the government to administer grants to the National Gallery. Three years later, the first professional curator was appointed.

In 1913, the National Gallery was incorporated by Act of Parliament and placed under the administration of a board of trustees appointed by the Governor General in Council; its function was to encourage public interest in the arts and to promote the interests of art throughout the country. Under this management, the Gallery increased its collections and developed into an internationally recognized art institution. Today, a board of trustees reporting to the Secretary of State administers all the National Museums of Canada, including the National Gallery, under the National Museums Act (RSC 1970, c.N-12).

The Gallery's collections have been built up along international lines and give the people of Canada an indication of the origins from which their own traditions are developing. The collection of Canadian art, the most extensive and important in existence, is continually being augmented. Over 60% of all new acquisitions since 1966 have been Canadian. There are now more than 12,200 works of art in the collections. Included are many Old Masters, 12 having been acquired from the famous Liechtenstein collection. The Massey collection was presented to the Gallery during 1946-50 by the Massey Foundation. The Vincent Massey Bequest of 100 works was received in 1968. In 1974 an important gift of drawings was donated by Mrs. Samuel Bronfman of Montreal in memory of her husband. There is a growing collection of contemporary art, prints and drawings, and diploma works of the Royal Canadian Academy. The services of the Gallery include the operation of a reference library open to the public containing more than 45,000 volumes and periodicals on the history of art and other related subjects.

A program of exhibitions, lectures, films and guided tours is maintained for visitors to the Gallery in Ottawa. The interests of the country as a whole are served by circulating exhibitions, lecture tours, publications, reproductions and films prepared by the National Gallery staff. Promotion of and information on art films are handled by the Canadian Centre for Films on Art, and their distribution by the Canadian Film Institute. The Gallery promotes interest in Canadian art abroad by participating in international exhibitions such as the Biennials of Venice and Paris, and by preparing major exhibitions of Canadian art for showing in other countries in collaboration with the Department of External Affairs. It also brings important exhibitions from abroad for showing in Canada.

The most important development of 1974 was the government's approval in principle of a new building for the National Gallery in Ottawa.

Major exhibitions in Ottawa included The Bronfman Gift of Drawings, William de Kooning: Drawings and Sculptures, Moshe Safdie: for everyone a Garden, Alberto Giacometti: a Retrospective, The Changing Image: Prints by Francisco Goya, and Canadian Painting in the Thirties. The Gallery's National Programme organized and circulated 23 exhibitions (including 11 new ones) in Canada and abroad to 63 bookings in 34 cities.

The major acquisition of the year was Bernini's Bust of Urban VIII. Purchase of a 17th century table ascribed to the Dutch artist Leonardo Van der Vinne represented a development of the Gallery's policy into the decorative arts, and the National Gallery Association's donation of an American Colonial kneehole desk dating from 1780-90 marked a new role for this non-profit volunteer group in supporting such a collection. The environmental sculpture "Bedroom" by contemporary American artist Claes Oldenburg was also purchased.

The National Museum of Natural Sciences has seven divisions: Botany, Vertebrate Zoology, Invertebrate Zoology, the Canadian Oceanographic Identification Centre (for identification of marine and freshwater organisms), Mineral Sciences, Palaeontology and Interpretation and Extension. The Museum also maintains the Zooarchaeology Research Centre which identifies animal remnants from archaeological digs.

During 1974 numerous specimens were added to the mineral, fossil, plant and animal collections, gathered through scientific expeditions, purchases, exchanges and gifts. The Museum staff were engaged in extensive field work in all regions of Canada and abroad. In all, 86 research projects were undertaken. Seventy-five manuscripts were prepared.

Scientific support programs were carried out by the Canadian Oceanographic Identification Centre. A large number of specimens were sorted and identified for government and university scientists.

The National Museum of Man reopened on October 2, 1974, after being closed for five years for renovations. Through its six divisions — Archaeological Survey of Canada, Canadian Ethnology Service, Canadian Centre for Folk Culture Studies, Canadian War Museum, History and Communications — the National Museum of Man conducts research in Canadian studies, collects and preserves artifacts of material culture and extends the museum's programs across Canada through travelling exhibits and educational loans.

The Canadian Centre for Folk Cultural Studies is both a research institute and a repository of the largest archive in Canada of folk culture materials. The Canadian War

Museum houses an extensive collection of the memorabilia of Canada's military past ranging from military art and medals to tanks and bayonets from all wars involving Canadian participants. The Archaeological Survey of Canada has undertaken more than 350 research and salvage projects in Canadian prehistory in the past 12 years, including 16 in 1974, which have dramatically altered the knowledge of Canada's past. The Canadian Ethnology Service concentrates primarily on the Inuit, Indian and Métis cultures and has collected artifacts ranging from the very important Speyer Collection of early native 18th and 19th century cultural material to contemporary Inuit and Indian Art. Research in Canadian history is conducted by the History Division which has collected and restored over 15,000 items of period furnishings including the Schwartz collection of Canadiana. The Communications Division began an extension program in 1970 to provide access to the museum's collection across Canada and to ensure museum service at the community level. Its responsibilities include travelling exhibitions, 16 of which were circulated in 1974-75, and educational loans along with information and public relations services. Exhibitions depicting Canada's ethnic cultures, folk toys, Inuit history and art, Quebec furniture, the first exhibition on the Athapaskan Indians, and catalogues and monographs are part of the museum's diverse program of national and international travelling exhibitions, films and television programs.

The National Museum of Science and Technology. November 1967 saw the opening of the National Museum of Science and Technology as the newest of the four National Museums. This museum challenges over 750,000 visitors a year to climb, push, pull or just view its definitive collections. An additional 250,000 annually visit the National Aeronautical Collection.

The exhibit pavilions contain examples from the history of ground transportation such as sleighs, streetcars, steam locomotives and antique cars, to aviation and space, beginning with Canada's first powered heavier-than-air flight. There are also "seeing puzzles", experiments and skill-trying tests in the physics hall; the history of agriculture to present modern day techniques; marine transport; meteorology; time pieces; a model workshop and astronomy.

Housed at Rockcliffe Airport is the Museum's National Aeronautical Collection. Over 90 aircraft illustrate the progress of aviation from primitive to present times and the importance of the flying machine in the discovery and development of Canada. Included is one of the world's largest collections of aircraft engines.

Educational programs are developed and conducted by a staff of tour guides on general or special topics for all age groups. The newly opened observatory houses Canada's largest refracting telescope which is used for evening educational programs. Also available is a 10,000-volume library which places special emphasis on a retrospective collection of Canadian aviation.

The Science Museum also participates in the creation of distinct exhibits, many of which are sent on tour throughout Canada. There are also exchanges of artifacts with museums abroad. Annual activities on July 1st include rides in antique automobiles and stage coaches, demonstrations of vintage agricultural implements and a steam train. Also during the summer months a steam train makes a return trip from Ottawa to Wakefield, Que. each Sunday and Wednesday.

7.3.3 The Canada Council

The Canada Council was created in 1957 by an Act of Parliament, to "foster and promote the study and enjoyment of, and the production of works in the arts, humanities and social sciences". It carries out its task mainly through a broad program of fellowships and grants of various types. It also shares responsibility for Canada's cultural relations with other countries in co-operation with the Department of External Affairs. The Council meets at least three times a year and is made up of a chairman, a vice-chairman and 19 members, all appointed by the Governor in Council. Its administration is headed by a director and an associate director, also appointed by the Governor in Council.

Within the limits of the Canada Council Act, the Council enjoys a large measure of autonomy, setting its own policies and developing and carrying out its own programs in consultation with the academic and artistic community. The Council reports to Parliament through the Secretary of State and also appears before the Standing Committee on Broadcasting, Film and Assistance to the Arts.

The Council's income is derived from three sources: an annual grant of the Canadian government which amounted to \$36.5 million for the year ended March 31, 1974; the Endowment Fund established by Parliament when it created the Council, which yields over \$5 million annually; and private funds willed or donated to the Council and used in accordance with the wishes of the donors.

Assistance to the humanities and social sciences accounts for the larger part of the Council's budget, an amount of \$21.3 million in 1973-74. In support of research training, the Council awarded 1,722 doctoral fellowships totalling \$9.1 million; for research work, 366 leave and research fellowships totalling \$3.2 million and \$4.9 million in research grants; for research communication, a total of \$2.0 million in assistance to learned meetings, visiting professors, attendance of Canadian scholars at international conferences, and publication of learned journals and scholarly manuscripts.

In the arts, the Council spent \$18.3 million, of which \$2.0 million was used to finance some 808 grants, bursaries and awards to individuals in the various art forms, \$16.0 million was applied to grants to organizations, including \$3.6 million for music, \$4.4 million for theatre, \$3.0 million for dance and opera, \$2.1 million for the visual arts (including \$800,000 on the Art Bank), \$736,000 for cinema and photography, and \$2.3 million for writing and publication. Of the total arts budget, \$465,000 went to the Council's Touring Office, created in 1973 to promote and stimulate the touring of the performing arts in Canada.

Through the Explorations Program, the Council spent \$1.0 million to assist in projects on Canada's cultural and historical heritage and innovative projects which explore new forms of expression and creativity in the arts, humanities and social sciences.

The Canada Council administers, on behalf of the Canadian government, several programs of cultural and academic exchanges with Mexico, Japan, Finland, Italy, France, Belgium, Switzerland, the Federal Republic of Germany, the Netherlands, the United Kingdom, continental Latin America, China and the USSR. Under these programs, fellowships and scholarships are awarded to foreign nationals for study in Canada, Canadian cultural institutions receive grants to bring distinguished university professors, scholars and artists to Canada, and Canadian academics receive grants to lecture or conduct research abroad. Expenditures for Cultural Exchanges programs totalled \$823,000 in 1973-74.

The Council also administers the funds of the Canadian Cultural Institute in Rome, created in 1967 by an agreement between Canada and Italy. The Institute's income is used to provide a small number of fellowships for Canadian artists and scholars wishing to work or study in Italy. The Killam Scholarships of the Canada Council were inaugurated in 1967 with funds from the Killam estate. These awards go to support scholars of exceptional ability engaged in research projects of far-reaching significance. In 1973-74, there were 27 awards made under this program, totalling \$617,000.

Under its power to "make awards to persons in Canada for outstanding accomplishments in the arts, humanities or social sciences", the Council annually awards three \$15,000 Molson prizes from a fund created by the Molson Foundation. The Governor General's Literary Awards, financed by the Council, are awarded annually to six Canadian writers. In addition, the Council awards annually two Translation Prizes to the year's best English and French translations of Canadian works.

The Canada Council Act provides for certain functions in relation to the United Nations Educational Scientific and Cultural Organization. It has accordingly established a National Commission for UNESCO and provides its secretariat and budget. As an agent of the Council, the Canadian Commission for UNESCO co-ordinates UNESCO program activities abroad and administers a modest program in furtherance of UNESCO objectives.

7.3.4 Provincial assistance to the arts

During recent years provincial governments, as well as other levels of government and industry, have become more and more aware of the significance of the arts in the life of the community. All provinces except Prince Edward Island now give some form of financial assistance to artists (writers, poets, painters and sculptors), cultural organizations or community councils. The assistance provided by these provinces is described below.

Newfoundland. The Cultural Affairs Division of the Department of Tourism contributes to the upkeep of cultural centres in the province and provides grants, awards and subsidies to

individuals or groups native to or touring the province for performances. Grants and awards enable local theatrical groups to produce and perform in centres around the province. For 1975 the provincial government has budgeted \$50,000 for these grants and a further \$175,000 for subsidies to enable nationally known companies and groups to perform in the province at centres which normally would be unable to hire them. Subsidies also enable centres such as the Marine Museum in St. John's to purchase works for exhibition.

Nova Scotia. This province has no specific legislation authorizing financial assistance for cultural advancement but the Departments of Education and of Recreation among others provide grants to a number of organizations. Payments are made under the Provincial Finance Act from departmental appropriations.

In the year ended March 31, 1974 grants totalling \$218,400 were paid out by the Department of Education, including \$110,000 to the Neptune Theatre Foundation, \$45,000 to the Atlantic Symphony Orchestra, \$15,000 to the Nova Scotia Museum of Fine Arts and \$15,000 to the Theatre Arts Festival International.

The Department of Finance contributed \$41,666 to the Hector Bi-Centennial Celebration Committee. The Department of Recreation contributed to: Mermaid Theatre \$20,000; Nova Scotia Festival of the Arts \$34,500; Nova Scotia Museum of Fine Arts \$5,000; Pier 2 Theatre \$4,000; Theatre Arts Festival International \$5,000; as well as an additional \$20,000 plus for specifically cultural organizations. In addition the Department made grants totalling more than \$26,500 in support of local choirs and bands. The Department of Tourism contributed to various local festivals and cultural attractions, of interest to tourists as well as the local population, through \$73,600 in local tourist promotion grants distributed throughout the province.

The Fine Arts and Handcrafts section of the Adult Education Program of the Department of Education operated on a budget of \$132,700 and disbursed small grants for instructional purposes to various cultural organizations. The Nova Scotia Museum section of the Cultural Services Program of the Department of Education operated under a budget of \$1,186,500 and disbursed grants to local museums and historical societies. Other expenditures in the Department of Education included: Nova Scotia Provincial Libraries, \$1,640,900; Publication and Information, \$155,500; and Audio-visual Services, \$298,700.

New Brunswick provides assistance to Le Centre de Promotion et de Diffusion de la Culture, a Moncton based agency which co-ordinates Acadian cultural activities — choirs, theatre, individual artist presentations, etc. Assistance is also given to the provincial competitive Festival of Music, Folk Song and Band Festivals, Dance Troupes, Arts Councils, Provincial Youth Orchestra, Atlantic Symphony, Theatre New Brunswick, various choral and drama groups, art associations, arts councils and writers. In addition, the province assists in sponsoring tours by individual performing artists within and outside the province.

Quebec. The Department of Cultural Affairs was established on March 24, 1961 by an Act of the provincial legislature. The Department was charged with the administration of cultural organizations or institutions such as libraries, museums, archives and conservatories. It is also responsible for artistic, literary and scientific competitions and for the Cultural Properties Commission, private museums, the Museum of Contemporary Art, the Montreal Museum of Fine Arts, the Place des Arts and the Grand Théâtre de Quebec.

There are six main branches. The Management Branch supplies administrative services. The Literary Affairs Branch implements legislation on literary matters and books, including public libraries and library buildings, literary and scientific competitions, publishing insurance, the National Library of Quebec, and Orders in Council dealing with publishing and book distribution. During 1973-74 the Library Service of the Branch distributed \$2.2 million and a total of 114 libraries and the Literary Affairs and Books Service made grants to associations and publishers totalling \$190,200.

The Graphic Arts Branch administers the Quebec Museums Act, the Montreal Museum of Fine Arts Act, the "One per cent Act" and the Order in Council establishing the Committee responsible for implementing that Act, as well as the Order in Council setting up the Acquisitions Board of the Quebec Museum. This Branch also provides assistance to artists to allow them to show their works. During 1973-74 the Branch allotted \$1,217,860 to associations and creative artists in this field.

The Heritage Branch is responsible for implementing acts regarding cultural properties. It is also required to supply any necessary technical and financial assistance to preserve, maintain and develop Quebec's heritage. This Branch co-ordinates and supervises archaeological and ethnological research, protects natural and historic sites, preserves manuscripts, furniture and buildings of historic significance, catalogues, acquires and preserves private, semi-public and public archives, and keeps an up-to-date inventory of works of art. During 1973-74 the Heritage Branch allotted \$1.8 million to the restoration and renovation of historic properties.

The Film and Audio-visual Branch advises all departments and organizations of government on films and audio-visual material, produces films and audio-visual materials, and distributes visual materials ordered or sponsored by government departments and organizations. During 1973-74, its production budget reached \$2.2 million.

The Performing Arts Branch plans and directs the Department's instructional and financial role by assisting various presentations of the performing arts. It also administers the Conservatories Act. During 1973-74 the Branch allocated \$1.6 million to musical organizations and \$1.8 million to the theatre.

The Cultural Relations Branch assists in bringing foreign companies and individuals to encourage the development of Quebec's cultural resources. In addition, the Regional Cultural Development Branch helps to stimulate local creativity.

Ontario. The Ministry of Colleges and Universities, through its Cultural Affairs Division, allocated in 1974-75 the following amounts: the Ontario Arts Council, \$7 million; the Royal Ontario Museum, \$5.7 million; the McMichael Canadian Collection of Art, \$465,000; the Art Gallery of Ontario, \$2.4 million; the Royal Botanical Gardens, \$495,000; Festival Ontario, \$225,000; grants to local museums, \$812,000; libraries, \$15.7 million; Ontario Educational Communications Authority, \$7.8 million; the Elliot Lake Centre for Continuing Education, \$250,000; and the Ontario Science Centre, \$4.9 million.

The prime function of the Division is to obtain, co-ordinate, and present budgets and multi-year plans for the 13 cultural agencies it serves and the three cultural programs it administers. In January 1975 the Ontario government established a new Ministry of Culture and Recreation encompassing programs for the development of the performing and creative arts, community recreation, amateur sports and the preservation of Ontario's architectural, historical and archaeological heritage. Other ministries involved in cultural programming are Agriculture and Food, Education, Natural Resources, Industry and Tourism, and Treasury, Economics and Intergovernmental Affairs.

The Province of Ontario Council for the Arts, now a part of the new Ministry, was established by legislation in 1963 to promote the study, enjoyment and production of works in the arts. It provides financial assistance to performing and creative arts groups and individuals; advises and consults with members of the arts community; and develops projects aimed at promoting and expanding the arts and the public interest in them throughout the province. The Council also collaborates with other agencies and levels of government in encouraging support for the arts. The Arts Council contributes to such organizations as the National Ballet of Canada, the Toronto Symphony Orchestra, the Toronto Arts Foundation, the Canadian Opera Company, the Stratford Shakespearean Festival and the Shaw Festival. In addition it makes grants to individuals and organizations in the performing and creative arts, and assists with regional programs, touring and sponsorship programs, and educational programs in the arts.

Manitoba. The Manitoba Arts Council was formed by legislation passed in 1965 providing for a chairman, vice-chairman and 10 members appointed by the Lieutenant Governor in Council, with the objective of promoting the study, enjoyment, production and performance of works in the arts by assisting and co-operating with those organizations involved in cultural development, providing for grants, scholarships or loans to Manitobans for study or research in the arts and making awards to citizens of Manitoba for outstanding accomplishments in the arts. Working on a budget of \$404,000, the Manitoba Arts Council in the year ended March 31, 1974, made grants to 28 organizations, including \$65,000 to the Manitoba Theatre Centre, \$42,500 to Rainbow Stage, \$80,000 to the Royal Winnipeg Ballet, and \$72,000 to the Winnipeg Symphony Orchestra. The Manitoba Arts Council's awards program provided assistance to individual Manitoba artists.

Saskatchewan. In 1949 the Saskatchewan Arts Board was established by Act of the Legislature, with the stated aim of endeavouring to make available to the people of Saskatchewan opportunities to engage in any one or more of the following activities: drama, the visual arts, music, literature, handicrafts and other arts, to provide for the training of lecturers and instructors, to assist students ordinarily resident in Saskatchewan to pursue their studies in the arts, and to co-operate with organizations having similar objectives.

The Saskatchewan Arts Board, funded by the provincial government but functioning independently, is composed of not less than seven nor more than 15 volunteer members appointed annually by the Lieutenant Governor in Council. These members are from all parts of the province but represent no specific areas or any specific disciplines in the arts. The work of the Board is carried out by a staff of two consultants and three office personnel under an executive director. Experts in various fields of the arts are engaged for specific projects.

Over the years, handicraft, visual and performing arts programs have been expanded to the point where some have reached the professional level. Workshops, lectures and seminars at an advanced level have been sponsored by the Board, and considerable assistance has been given to local arts and crafts organizations in sponsoring similar projects at a local level. In most cases, the Board prefers to assist established organizations in carrying out their own programs.

A highly successful Saskatchewan Summer School of the Arts, operated annually by the Saskatchewan Arts Board at Echo Valley Centre near Fort Qu'Appelle, offers one- to four-week courses in band, orchestra, stage band, choral singing, piping and drumming, highland and national dancing, ballet, painting, pottery, acting, creative writing and weaving, with instruction by qualified teachers.

For five years from 1965, the annual month-long Saskatchewan Festival of the Arts focused attention on the arts in communities throughout the province by presenting top-calibre artistic performances and exhibitions. This Festival has been replaced by similar programs planned by individual communities to meet their specific needs.

Each year the Board has provided financial assistance to individual provincial artists to help them further their artistic training, or to establish themselves professionally. Individual assistance is based primarily on financial need, with scholarship and artistic ability as important factors. Emphasis is placed on assisting those in undergraduate studies or those striving to achieve professionalism.

The total budget of the Saskatchewan Arts Board in 1974 was \$555,000. Financial assistance extended to organizations included a direct grant to Globe Theatre of \$45,000 plus \$23,475 in deficit protection to schools engaging Globe's School Company, \$30,000 to the Regina Symphony, \$30,000 to the Saskatoon Symphony, \$17,800 to the Saskatchewan Music Festival Association, \$12,500 to the Saskatchewan Dance Theatre, \$11,652 to the Saskatchewan Youth Band, Orchestra and Chorus, \$8,000 to Cherry Films, \$6,000 to the Saskatchewan Writers' Guild, \$5,850 to community galleries, \$4,200 to the Organization of Saskatchewan Arts Councils, \$4,600 for community artist programs in two cities, \$4,000 to the Norman Mackenzie Art Gallery, \$3,225 to the Mendel Art Gallery, \$3,000 to Twenty-Fifth Street House Theatre, \$2,200 to the Photographers' Gallery, \$2,100 to the Kinsmen International Band Festival, \$2,000 to the Saskatchewan Junior Concert Society, \$2,000 to the Society for Promotion of Art History Publications, \$1,800 to the Saskatchewan Society for Education Through Art, \$1,700 to the Shoestring Gallery, \$1,500 to the Regina Modern Dance Workshop, \$1,100 to Westwind Films, and \$1,000 to St. Peter's College.

Assistance for workshops, conferences, seminars and exhibitions in 1974 totalled \$12,642. During the same period, the Saskatchewan Arts Board spent \$1,023 for literary services, including poets in the classroom, and a script reading service. Organizations in 15 communities received deficit protection totalling \$5,158 to enable them to present professional performing arts events. In 1974 the Board awarded a total of \$40,000 in individual assistance to 64 applicants.

Alberta. The Cultural Development Division of the Department of Culture, Youth and Recreation was set up after passage of an Act of the Legislature in 1946 providing for "encouragement of the cultural development of the people of this Province". The Act has since been amended several times to give it greater flexibility.

The Division promotes art, public libraries and interest in the province's cultural heritage. Its program is intended to give the public opportunities to witness the best in performing arts tours and art exhibitions; to conduct training courses at regular intervals for a variety of leaders, particularly teachers in the public school system and instructors at special institutions such as those for the mentally and physically handicapped, the aged, or inmates of penal institutions; to provide consultative services for cultural organizations throughout the province; and to give financial assistance to individuals, local amateur and professional institutions and provincial government organizations whose aims are the development of the arts. Awards to individuals wishing to further their training in some form of the arts amount to over \$250,000 annually. The Alberta Art Foundation was established by legislation in 1972, and has been allocated \$50,000 annually for the purchase of Alberta arts and crafts. The budget of the Division for the year ended March 31, 1974 was in excess of \$1.8 million.

The Division is also involved in ethno-cultural development, offering consultative services and financial assistance in nearly all areas affecting cultural heritage. The Alberta Film Censor Board is now attached to the Division for purposes of administration.

British Columbia. The British Columbia Cultural Fund was set up by statute in 1967. That Act set aside \$5 million in an endowment fund, the interest from which was to be spent to stimulate the cultural development of the people of the province. In September 1967 an advisory committee was established to receive applications for cultural grants and to report their recommendations to the Department of Finance for the necessary funds. The amount of the endowment was raised to \$10 million in 1969, to \$15 million in 1972, and to \$20 million in 1974. Proceeds from the Western Canada Lottery Foundation also will be used, in part, to support cultural activities in the province.

Up to December 31, 1974, grants totalling almost \$5.6 million had been awarded by the Fund to support cultural activities throughout the province. The Fund also provides a small degree of financial support to the National Theatre School, the National Youth Orchestra, and the Canadian Music Centre.

Grants totalling \$1.5 million were made in the fiscal year 1973-74, of which about 70% went to major non-profit organizations such as symphony, drama and opera societies. About 19% of the grants in each year went to Community Arts Councils and the remainder to art acquisitions, scholarships, seminars and miscellaneous grants.

7.4 Federal film agencies

7.4.1 National Film Board

The National Film Board, an agency of the federal government, was established by Act of Parliament in 1939 and reconstituted by the National Film Act in 1950 "to initiate and promote the production and distribution of films in the national interest". The Board's films are produced in Canada's two official languages and have made a considerable contribution to the country's culture and to the national identity. In addition to 35mm and 16mm films, the Board produces and distributes other visual aids material — filmstrips, 8mm loop films, slide sets, overhead projectuals, multi-media kits and photo stories.

The growing sophistication of film audiences and the increasing importance of film as a means of communication are reflected in the nature of the films produced — features, documentaries, informational films, films for the specific needs of government departments, and films designed for particular social purposes. The Board strives to serve as innovator of new cinema techniques, as well as a recorder of the nation's day-to-day evolution. Thus, new needs and greater public sensitivity have encouraged the Board's film-makers to explore new film styles and to experiment in new areas of film production, and there have been corresponding new departures in the distribution and use of films as more people turn to films as a matter of course for information and assistance in many activities.

In Canada, the Board's productions are distributed through community outlets, schools and universities, television stations, theatres and commercial sales. In all these areas annual figures show a steady and, in some instances, a marked increase. A large part of the 16mm community film audience is reached through film libraries, film councils and special-interest groups. The growing demand for films can be attributed to the wide range of subject matter available; the Board's catalogue lists 60 main and sub-categories. Original films are shown

regularly over English- and French-language television networks in Canada as well as in theatres. During 1973-74 over 17,000 commercial bookings were made for NFB's theatrical short films. There were also almost 400,000 screenings of films from NFB's 27 regional libraries.

NFB film distribution outside Canada also continues to increase. The Board's films are seen at most of the world's international film festivals with gratifying response from judges, film critics and audiences. Film distribution abroad is promoted by the Board's offices in New York, London, Paris, New Delhi and Tokyo, and by posts of the Departments of External Affairs and of Industry, Trade and Commerce. NFB films are shown in theatres of more than 100 countries. In 1973-74, NFB films were seen by an estimated 766 million people around the world, at a per capita cost to Canadians of about 78 cents. To increase the usefulness of films about Canada abroad, the Board makes foreign-language versions of some films in many languages, and language versions are also made under contract with television networks and school film distributors in other countries. The Board co-operates with the Canadian Government Travel Bureau to distribute films in support of the Canadian travel industry to appropriate audiences in the United States, Europe and other areas.

7.4.2 Canadian Film Development Corporation

The Canadian Film Development Corporation was established in March 1967 to promote the development of a feature film industry in Canada, and in so doing it co-operates with federal and provincial departments and agencies with similar interests. It invests in Canadian productions in return for a share of the profits, makes loans to producers and assists in the distribution of feature films. The Corporation also makes awards for outstanding accomplishments in production. It has recently extended its financial assistance to increase emphasis on promotion, marketing and distribution of productions.

Since its creation the Corporation has invested \$13.6 million in the production of 136 films with a combined budget of \$35.9 million. These films provided 596 assignments for Canadian directors, producers and production managers, 7,294 roles for actors and 1,939 jobs for technicians in the Canadian film industry. Moreover, laboratories have earned more than \$4.2 million and equipment rental companies more than \$2.4 million.

In 1973-74, the Corporation participated financially in the production of 19 feature films, of which nine were original French-language productions (including three co-produced under the France-Canada co-production treaty) and 10 were in English (five produced in Toronto, four in Montreal and one in Vancouver). Three of these films were produced under the terms of the Special Investment Program, designed to assist film-makers to direct their first feature film and ensure a strong future in the Canadian film industry. Their budgets were limited to \$115,000. They were selected from 21 French-language and 49 English-language proposals, and were produced in Quebec, Ontario and British Columbia.

In addition, the Corporation invested in 11 projects at the pre-production stage, in the English "dubbing" costs of eight French-language films produced in Quebec, and in nine promotion campaigns for theatrical release of films already produced with its assistance.

The combined budgets of the 19 feature films amounted to \$7.1 million. The Corporation invested \$2.6 million, or 37% of the total.

By September 1974, 118 feature films produced with the Corporation's assistance were being distributed — 34 more than at the end of the preceding fiscal year. As of March 31, 1974, the Corporation had recovered \$1.8 million of the money invested in feature films since its inception — \$786,028 in 1973-74, \$339,745 in 1972-73, and the balance in previous years. Only a small percentage of the returns came from English-language films in 1972-73, but this rose considerably in 1973-74 and the Corporation expects the improvement to continue in 1974-75.

The Secretary of State, through the Canadian Film Development Corporation, made an agreement in July 1973 with Famous Players and Odeon (the two most important theatre chains in Canada) and Canadian distributing companies. The agreement provides for commercial presentation of Canadian 35mm feature films produced or dubbed in English for a period of at least two weeks in Montreal, Toronto and Vancouver. It was anticipated that this guaranteed launch would assure most of the CFDC-assisted English-language pictures with a

springboard into the Canadian market. Famous Players agreed to show two thirds of the films, and Odeon one third. As part of this agreement, the CFDC increased its investment in those films to help distributors and producers defray initial promotion and publicity costs.

The Corporation has also assisted some Canadian feature-length French-language productions which might be expected to have difficulty in finding an audience, through similar agreements, but has left complete responsibility for financing the promotion of their own commercial product to Quebec distributors.

The Corporation is also taking steps to encourage the distribution of Canadian feature films abroad. In co-operation with the Festivals Office of the Department of the Secretary of State, it supports the market aspect of the Cannes Festival and looks for every possible way of assisting Canadian producers to sell their films abroad. One film which the Corporation supported in 1970, *The heart farm* (now re-titled *The only way out is dead*) has been sold in at least 27 countries, while another, *Fortune and men's eyes*, has also been seen in at least 30. *Les mâles* and *La vraie nature de Bernadette* are also continuing successful careers abroad. Twentieth Century-Fox, the distributor of *The Neptune factor*, reported in March 1974 that the film had grossed \$2.3 million in the United States, the United Kingdom and several other countries.

In 1973-74, the Indian government invited Canada to present a week of Canadian cinema in that country. As a result, India purchased the distribution rights to four Canadian feature films.

An increasing number of Canadian features are being invited to international film festivals, and the film markets usually organized in conjunction with these festivals now provide a significant opportunity for international sales. Sixty-five short-, medium- and feature-length films produced by private industry won 81 prizes between January 1, 1973 and the end of March 1974. In Canada, the Canadian Film Awards held a competition for dramatic feature length films; *Slipstream* was judged the best feature film of the year, and *Kamouraska* won the special jury prize.

More Canadian feature films were also shown on Canadian television than in previous years.

7.5 Public archives and library services

7.5.1 The Public Archives

The Public Archives was established in 1872 and now operates under the direction of the Dominion Archivist by authority of the Public Archives Act. It serves a dual role. As a research institution, it is responsible for acquiring from any source all nationally significant documents relating to the development of the country and of value to Canada, and for providing suitable research services and facilities to make this material available to the public. As an essential part of the government administration, it has broad responsibilities in regard to the promotion of efficiency and economy in the management of its records.

The Historical Branch comprises seven divisions. The Manuscript Division contains manuscript collections, including private papers of statesmen and other distinguished citizens, records of cultural and commercial societies, and copies of records relating to Canada and now held in France, England and other countries. The holdings of the Public Records Division consist of selected records of all departments and agencies of the Government of Canada. The Picture Division has charge of documentary paintings, water colours, engravings and photographs relating to people, historical events, places and objects. The National Film Archives has an extensive collection of films and sound recordings. The Map Division has custody of thousands of maps and plans pertaining to the discovery, exploration and settlement of this country and its topography, as well as a large collection of current topographical maps of foreign countries. The Library contains more than 80,000 volumes on Canadian history, including numerous pamphlets, periodicals and government publications. The Machine-Readable Archives Division holds selected automated public records and machine-readable archives of permanent value from the private sector.

Although documents in the Archives may not be taken out on loan, they may be consulted in the building, and a 24-hour-a-day service is provided for accredited research workers. Reproductions of available material may be obtained for a moderate fee on request

and many of the documents in the Manuscript Division are on microfilm and may be obtained on interlibrary loan.

The Records Management Branch assists departments and agencies in the setting up and operation of their records management programs. Its service also includes recommendations and advice on scheduling and disposal of records. At the Ottawa, Toronto, Montreal, Vancouver, Winnipeg and Halifax records centres, it provides storage, reference service and planned and economical disposal of dormant records. Other regional centres are being established in major cities across Canada.

The Administration and Technical Services Branch, in addition to an extensive conservation and restoration program, provides a technical and advisory service on microfilming to government departments and agencies. Microfilm work is done for departments at cost. It also provides a full range of services to the National Library.

Branch offices of the Public Archives are located in London, England and Paris, France. The Archives also administers Laurier House in Ottawa as an historical museum.

7.5.2 Library services

7.5.2.1 The National Library of Canada

The National Library was formally established on January 1, 1953 by Act of Parliament. On the same date it absorbed the Canadian Bibliographic Centre, which had been engaged in preliminary work and planning since 1950. The Library is now governed by the National Library Act, 1969 which broadened the powers of the National Librarian to whom is assigned the responsibility of co-ordinating government library services. The Act established a National Library Advisory Board consisting of 15 members.

The book collection consists of more than 500,000 volumes, supplemented by microcopies of more than 100,000 additional titles. Newspaper files formerly in several locations have been brought together and now form the largest collection of Canadian newspapers in Canada.

The Library compiles and publishes the national bibliography, *Canadiana*, which is available in card, tape and printed editions. *Canadiana* lists publications relating to Canada, and includes bibliographic descriptions of Canadian trade publications, official publications of the federal government and the 10 provinces, films, filmstrips and phonograph records produced in Canada, works by Canadians and material on Canada published abroad. More than 30,000 titles were included in 1974. Retrospective bibliographies are planned or in progress.

The Canadian Union Catalogue lists about 4 million volumes in about 300 government, university, public and special libraries in all provinces. New accessions (which numbered over 1.5 million in 1973-74) are reported regularly, and the Union Catalogue thus provides a key to the main book resources of the country. During the year ended March 31, 1974, the Reference Branch was asked to locate nearly 130,000 titles, and it is noteworthy that copies of about 80% of them were found in Canadian libraries.

The National Library provides a computerized literature search service in the fields of the social and behavioural sciences and the humanities. This is accomplished by means of the CAN/SDI (Canadian Selective Dissemination of Information) network and various on-line inquiry systems. In early 1974 the Library published a *Union list of serials indexed by social sciences citation index held by Canadian libraries*. This list complements the SDI service by providing library locations for cited journals; it will be followed by other lists of a similar specialized nature. These lists will eventually be consolidated to form a full-scale union list.

A list of books about Canada, prepared by the National Library, appears in Appendix 6.

7.5.2.2 Public libraries

Public libraries in Canada are organized under provincial legislation which specifies the method of establishment, the services to be provided and the means of support. Municipalities may organize and maintain public libraries or join together to form regional libraries according to provincial legislation. Provincial public library agencies advise local and regional libraries and distribute grants.

Table 7.2 gives summary results of the annual public library survey for 1973, with comparable totals for 1972 and 1971. Book circulation was 99.3 million or 4.5 per capita. The

current operating payments of all public libraries amounted to \$88.8 million or \$4.02 per capita compared with \$3.58 in the previous year. The full-time staff numbered 5,501 in 1973.

7.5.2.3 Libraries in universities and colleges

Libraries in 114 universities (including four-year affiliated or associated institutions) reported, for the academic year 1972-73, a total of 29.2 million volumes or 91.1 per full-time student. Expenditures of university libraries amounted to \$91.7 million or \$286 per full-time student. The total full-time staff of the libraries numbered 6,925. Details by province are given in Table 7.3.

Table 7.3 also shows that libraries in 151 colleges (post-secondary institutions such as community colleges, CEGEPs, colleges of applied arts and technology, teachers' colleges, etc.) reported a total bookstock for 1972-73 of 4.8 million volumes or 25.7 per full-time student. Expenditures of these libraries amounted to \$14.2 million or \$76.28 per full-time student. Total full-time staff of the libraries numbered 1,146.

Sources

- 7.1 - 7.3.1 Education, Science and Culture Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 7.3.2 Education, Science and Culture Division, Institutional and Public Finance Statistics Branch, Statistics Canada; The National Museums of Canada.
- 7.3.3 The Canada Council.
- 7.3.4 Supplied by the respective provincial governments.
- 7.4.1 The National Film Board.
- 7.4.2 The Canadian Film Development Corporation.
- 7.5.1 The Public Archives of Canada.
- 7.5.2 The National Library of Canada; Education, Science and Culture Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

7.1 Number of museums, art galleries and related institutions in Canada, 1972

Type of institution	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT and NWT	Canada
Museums complex ¹	1	2	5	2	5	15	6	9	4	7	1	57
General museum ²	4	3	9	4	10	38	19	22	10	20	1	140
Art museum or gallery	4	—	5	6	14	24	3	8	7	11	—	82
History museum	4	1	17	9	16	57	27	21	13	28	1	194
Historic building and/or restoration	6	3	16	8	9	46	6	5	7	8	2	116
Pioneer village	—	—	1	1	—	13	1	2	4	3	—	25
Natural science museum	—	—	—	—	2	5	5	3	2	3	—	20
Science and technology museum	—	—	1	—	—	3	—	—	1	—	—	5
Planetarium	—	—	—	—	—	1	1	—	1	—	—	3
Observatory	—	—	1	—	—	3	—	1	—	2	—	7
Archives	2	1	6	5	12	20	2	2	2	4	—	56
Zoo or wildlife refuge	—	1	1	1	8	9	1	2	4	5	—	32
Aquarium	—	—	—	1	2	1	—	1	—	1	—	6
Botanical garden, arboretum or conservatory	—	—	—	—	4	4	—	1	2	5	—	16
Cultural centre	—	—	1	—	15	3	—	2	—	—	—	21
Other ³	2	2	5	3	12	18	8	3	4	12	1	70
Total	23	13	68	40	109	260	79	82	61	109	6	850

¹Type of institution is classified as "Museums complex" if a questionnaire was used to cover two or more components of a complex which operate on the same site, e.g. planetarium and art museum.

²A museum is classified as "General" if the response indicated more than one category of collection of a diverse nature such as aeronautics, agriculture, ethnology.

³Institutions which did not completely fit into the specified types are classified as "Other".

7.2 Summary statistics of public libraries, 1973, with totals for 1971 and 1972

Province or territory	Population '000	Libraries reporting	Bookstock ¹	Circulation	Total operating expenditure \$'000	Full-time positions filled
Newfoundland	541	4	556,721	1,798,533	1,285	72
Prince Edward Island	115	1	147,338	392,722	402	27
Nova Scotia	805	11	914,880	2,901,482	2,378	186
New Brunswick	652	6	609,961	2,740,312	1,579	154
Quebec	6,081	110	4,667,797	10,834,838	8,599	552
Ontario	7,939	390	15,412,524	48,618,917	50,755	2,967 ²
Manitoba	998	26	1,135,311	3,792,101	2,720	171
Saskatchewan	908	11	1,478,554	4,558,060	3,967	299
Alberta	1,683	149	2,561,804	7,975,205	6,007	421
British Columbia	2,315	70	3,619,093	15,513,948	10,499	625
Yukon Territory	20	1	122,307	125,000	400	19
Northwest Territories	38	1	55,610	82,748	210	8
Canada 1973	22,095	780	31,281,900	99,333,866	88,801	5,501
1972	21,820	746	29,450,861	95,657,130	78,040	5,181
1971	21,568	716	27,241,907	97,336,707	70,617	5,261

¹Books and other materials catalogued as books; does not include periodical and newspaper titles.

²1973 includes all full-time positions with the exception of those in libraries in population centres under 10,000 where data are only available for professional positions.

7.3 Libraries in universities and colleges, academic year 1972-73

Province	Institutions reporting ¹	Full-time enrolment ²	Volumes of books, periodicals and pamphlets	Full-time staff	Total operating expenditures \$
UNIVERSITIES³	114	320,705	29,214,442	6,925	91,672,530
Newfoundland	2	7,301	436,657	107	1,952,757
Prince Edward Island	1	1,581	169,314	28	508,916
Nova Scotia	10	16,074	1,379,968	276	3,819,135
New Brunswick	7	10,229	1,053,489	214	2,719,270
Quebec	19	64,901	5,794,071	1,442	17,698,034
Ontario	42	134,869	12,882,300	3,065	40,464,240
Manitoba	8	17,023	1,303,534	291	3,674,416
Saskatchewan	9	13,380	1,185,752	241	3,358,942
Alberta	8	27,764	2,153,745	584	7,970,074
British Columbia	8	27,583	2,855,612	677	9,506,746
COLLEGES⁴	151	186,719	4,804,845	1,146	14,242,596
Newfoundland	2	820	23,930	5	65,850
Prince Edward Island	1	313	6,481	1	18,691
Nova Scotia	5	2,303	134,271	24	313,647
New Brunswick	3	920	38,322	6	30,102
Quebec	68	96,488	2,960,087	571	6,018,885
Ontario	39	50,227	785,054	253	3,664,990
Manitoba	3	3,173	52,843	25	272,208
Saskatchewan	4	2,709	60,596	9	163,054
Alberta	12	15,136	351,335	142	1,775,980
British Columbia	14	14,630	391,926	110	1,919,189

¹Associated, affiliated and federated colleges of universities and campuses of colleges which are separately administered are counted individually.

²Excludes part-time enrolment in full-time equivalents as well as enrolments in vocational and extension programs.

³Universities are defined as degree-granting institutions including affiliated, associated and federated colleges if these offer four-year academic programs leading to degrees which are granted by the parent university.

⁴Colleges are defined as post-secondary, non-degree-granting institutions offering technical and university transfer programs of one to four years duration. In addition, these may offer other levels of courses of less than one year in vocational and extension programs.

Sources

7.1 - 7.3 Education, Science and Culture Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

Chapter 8

Labour

8.1 The government in relation to labour

8.1.1 Canada Department of Labour

Established in 1900 under the Conciliation Act which involved the federal government in preventing and settling labour disputes, the Canada Department of Labour was formed to investigate important industrial questions and to collect, analyze and publish statistical and other information related to Canadian labour conditions. It also administered the Fair Wages Policy, adopted in the same year to protect people employed on federal government contracts and on projects supported by public funds. The Department's work focused on two areas, industrial relations and manpower supply, until January 1, 1966 when all manpower activities were transferred to the Department of Manpower and Immigration.

The industrial relations legislation now administered by the Canada Department of Labour applies to employers, employees and trade unions within federal jurisdiction. The Department is responsible for conciliation procedures in industrial disputes, investigating complaints of unfair labour practices, refusals to bargain and violations of legislation, processing trade union applications for certification and decertification and conducting representation votes. It determines wage rates and hours of work as far as federal government contracts for construction or supplies are concerned, and promotes improved industrial relations through joint union-management consultation and by preventive mediation through industry specialists. The Department is also responsible for administering assistance granted under the Automotive Manufacturing Assistance Regulations and the Adjustment Assistance Benefits Program for displaced workers in the textile and clothing, and the footwear and tanning industries.

Much of the legislation regulating employment practices, labour standards, safety and industrial regulations was integrated in the Canada Labour Code which came into force on July 15, 1971. It is discussed later in this Chapter.

The Department's over-all objective is to achieve economic and social progress by establishing a climate of good industrial relations promoted through three main programs: the Industrial Relations program encompassing the Conciliation and Arbitration Branch, the Employee Representation Branch, the Fair Employment Practices Branch and the Union-Management Services Branch; the Employment Standards program covering the Labour Standards Branch, the Accident Prevention and Compensation Branch and the Women's Bureau; the Research and Development program comprising the Economics and Research Branch, the International Labour Affairs Branch, the Legislative Research Branch and Library Services.

The Department maintains records of labour legislation in the provinces and in other countries and provides liaison between the International Labour Organization and the federal and provincial governments. As part of a broad publication program it publishes the monthly *Labour Gazette*.

8.1.2 Department of Manpower and Immigration

The Department of Manpower and Immigration recruits and develops manpower resources in line with the needs of the economy. The prime goal of Canada's manpower policy is to contribute to the country's economic and social goals by making the best use of its work force.

The Department's domestic field activities are carried out in five regions through some 400 Canada Manpower Centres and 95 Immigration Centres. Regional directors-general are responsible for both manpower and immigration activities in the field, reporting to headquarters.

Broad objectives of the Department in Canada are: to provide an effective employment service for both workers and employers through strategically located Canada Manpower Centres; to help workers attain their full potential through counselling or referral to skill-development and upgrading programs; to assist employers in recruiting skilled workers, and

facilitate long-range manpower planning by providing up-to-date occupational and labour market information; to help labour and management adapt to technological change by assisting them to co-operate in manpower adjustment programs; to provide reception, settlement and job placement services for immigrants; and to process documents for international travellers and enforce the Immigration Act and Regulations within Canada, providing facilities to handle applications from Canadians wishing to sponsor or nominate relatives.

In the fiscal year ended March 31, 1973, Canada Manpower Centres assisted more than 1.0 million persons, excluding casual workers, in finding continuing employment, and referred an additional 2.4 million clients to full- or part-time courses under the Canada Manpower Training Program. In the same period 18,000 clients were referred to federal-provincial rehabilitation programs (which became the responsibility of the Department of National Health and Welfare on April 1, 1973). In addition, 74,218 workers and trainees were granted moving and transportation assistance under the Canada Manpower Mobility Program.

The Manpower Division administers employment programs and services through Canada Manpower Centres. The Employer Services Branch deals with the demand side of the labour market, providing guidelines in the development and utilization of employment services for employers and specialized information on industrial needs. The Branch directs the operations of the Canada Manpower Consultative Service which assists industries undergoing manpower dislocations as a result of technological change. It also administers the Canada Manpower Mobility Program to facilitate the movement of workers to areas of job opportunity. The Manpower Utilization Branch is concerned with the supply side of the labour market. It formulates policies and guidelines for employment counselling and aptitude and achievement tests used by Canada Manpower Centre counsellors. The Branch also administers programs to assist new members of the labour force and students seeking summer employment. The Manpower Training Branch directs programs to help improve the qualifications of under-employed, unemployed or disadvantaged adult workers. Training courses are purchased from provincial or private schools or through contracts with employers and participants receive wage reimbursements or training allowances. The Special Programs Branch co-ordinates the application of all manpower programs and services to the needs of disadvantaged unemployed persons in the labour force.

In 1973-74 the federal government continued the Special Employment Plan introduced in October 1971 to alleviate seasonal unemployment while upgrading the skills of workers and contributing to community improvement and economic growth. The Department of Manpower and Immigration is responsible for two elements of the Plan: the Local Initiatives Program which in 1972-73 produced 88,799 jobs through 5,817 community projects conceived, organized and managed by private citizens and funded by the Department; and the Canada Manpower Training-on-the-Job Program. The Training-in-Industry element, together with Training-on-the-Job for skill shortages and for the disadvantaged, provided needed job skills for 47,000 workers.

A Job Creation Branch was established in the fall of 1973 as a permanent branch within the Manpower Division. A small permanent staff at headquarters directs the activities of a decentralized field operation organized at the provincial level. Programs currently operating under auspices of the Branch are the Local Initiatives Program (LIP), the Local Employment Assistance Program (LEAP) and the Opportunities for Youth Program (OFY).

The Manpower Delivery System provides three levels of service to people looking for employment. The first level consists of a Job Information Centre where job vacancies are displayed enabling clients to decide themselves which jobs they think they can fill. In addition, an Employment Opportunity Library at the Centre contains information about the Department's programs and the services of other departments and agencies. The second level of service is directed at people who are basically employable but who could benefit from counselling, from courses provided through the Canada Manpower Training Program or from assistance in finding jobs in other areas and in moving which is available through the Canada

Manpower Mobility Program. The third level is designed for clients who require concentrated counselling. Counsellors may use outside agencies for special assistance in helping people in this group to become employable. They are then referred to a job or may make selections from a "job bank".

The Immigration Division, under the Assistant Deputy Minister, Immigration, is responsible for the selection and reception of people coming to Canada who will be able to establish themselves economically, culturally and socially. They include people whose skills are required by the Canadian economy, relatives of Canadian residents, and refugees and non-immigrants entering on a short-term basis.

As of January 1, 1973, all non-immigrants entering Canada to take temporary work must have an employment visa. Visitors are not permitted to come to Canada to look for work. This regulation protects the Canadian labour force against the unwarranted use of short-term foreign labour.

To obtain an employment visa, the person concerned must have pre-arranged employment and certification by a Canada Manpower Centre that no Canadian citizen or landed immigrant is available for that job. Preliminary arrangements should be made at an Immigration office in the person's own country.

Other immigration regulations are discussed in Chapter 3.

The Strategic Planning and Research Division, formerly the Program Development Service, collects and analyzes information on national, regional and local labour market conditions in order to give direction to the Department's policies and programs. In addition, it carries out research programs in support of its own and other divisions' activities and develops career and occupational counselling and training materials.

These responsibilities are assigned to four branches and groups: Research Projects Group, Economic Analysis and Forecasts Branch, Strategic Planning and Evaluation Group, and Occupational and Training Analysis and Development Branch.

Administration Division. Headed by an Assistant Deputy Minister, the Administration Division comprises units responsible for providing professional and technical support to line management: information service, personnel, financial management, data processing, organization and methods, security and general administrative services.

8.1.3 Federal and provincial labour legislation

8.1.3.1 Jurisdictions

The Canada Labour Code (RSC 1970, c.L-1) applies only to federal undertakings and any other operations that Parliament declares are for the general advantage of Canada or two or more of its provinces. The Code consolidated previous legislation regulating employment practices, labour standards, etc., in the federal jurisdiction.

Because it imposes conditions on the rights of the employer and employee to enter into a contract of employment, labour legislation is, generally speaking, law in relation to civil rights and provincial legislatures are authorized to make laws in relation both to local works and to property and civil rights. Power to enact labour legislation has become, therefore, largely a provincial prerogative, under which a large body of legislation has been enacted affecting working hours, minimum wages, the physical conditions of workplaces, apprenticeship and training, wage payment and wage collection, labour-management relations and workmen's compensation.

8.1.3.2 Federal labour legislation

Industrial relations. The Conciliation and Arbitration Branch of the Department of Labour administers the provisions of Part V of the Canada Labour Code (Industrial Relations) relating to the application of formal conciliation procedures (i.e. the appointment of conciliation officers, conciliation commissioners and the establishment of conciliation boards). The Branch also provides mediation services to parties throughout the direct bargaining stage and in post-conciliation negotiations, including strike and lockout situations. If a dispute or difference between any employer and employees exists in an industry, the Minister of Labour may refer the matter to an Industrial Inquiry Commission for investigation. On behalf of the

Minister, the Branch administers the Code's provisions relating to certain types of complaints which must receive Ministerial consent before they can be referred to the Canada Labour Relations Board. Other violations of the Code referring Ministerial consent to prosecution are also handled by the Branch.

When requested, the Minister may appoint single arbitrators or arbitration board chairmen if parties or nominees are unable to agree on the selection.

The Canada Labour Relations Board administers provisions contained in Part V of the Canada Labour Code governing the acquisition and termination of bargaining rights; successor rights and obligations; the disposition of applications relating to technological change, and to illegal strikes and lockouts; complaints of unfair practices; and granting of access to employers' premises.

Fair employment practices. Part I of the Canada Labour Code (Fair Employment Practices) prohibits discrimination in employment on the grounds of race, colour, religion or national origin in any federal work, undertaking or business. It covers discrimination by employers, by trade unions in regard to membership or employment, by employers who use employment agencies that discriminate, and in the use of any form of application for employment, advertisement, written or oral inquiry that expresses directly or indirectly any limitation, specification or preference as to race, colour, religion or national origin.

Labour standards. Part III of the Canada Labour Code (Labour Standards) provides minimum standards of employment applicable to employers and employees in industries that are under the legislative authority of the Parliament of Canada.

The Code sets both standard and maximum hours of work. The overtime rate (one and a half times the regular rate) must be paid after eight hours in a day and 40 hours in a week, to a maximum of 48 hours in a week. Hours may be averaged when an employee's schedule of hours varies from day to day or week to week because of the nature of the work. If the Minister of Labour is satisfied that exceptional circumstances justify the additional hours, he may issue a permit allowing an employee to exceed the maximum hours. The Governor in Council may make regulations varying the standard and maximum hours for classes of employees in any specified industrial establishment where the Code standards would be unduly prejudicial to the interest of the employees or seriously detrimental to the operation of the establishment. An inquiry must be held before such regulations may be made.

The minimum wage is \$2.60 an hour for all persons 17 years of age or over and \$2.35 an hour for persons under 17 years of age as of July 23, 1975. The Governor in Council may issue orders from time to time increasing the minimum rate.

Employees are entitled to a two-week vacation with pay each year and a holiday with pay on each of the eight general holidays, or substitutes for them.

An employer must give advance notice to the Minister of Labour and the union, with a copy to the Department of Manpower and Immigration, when dismissing 50 or more employees during a four-week period. The length of notice varies according to the number of employees being dismissed: 50-100 employees, eight weeks; 101-300 employees, 12 weeks; more than 300 employees, 16 weeks. In addition, the employer and the trade union must provide the Department of Manpower and Immigration with whatever information it requests to assist the employees. The requirement to give notice may be waived for an industrial establishment or a specified class of employees by an order of the Minister of Labour, subject to any terms or conditions that he may determine.

Under the Code's provisions respecting individual dismissals, every employee with three months service (except a manager, superintendent or member of a profession) is entitled to two weeks notice of termination of his employment. In lieu of such notice, he is entitled to two weeks wages at his regular rate for his regular hours of work. In addition, an employee who has completed five consecutive years of continuous employment is entitled to severance pay based on two days wages at the regular rate for the regular hours of work, for each year of employment up to a maximum of 40 days wages. However, the employer is not required to give severance pay to an employee who is dismissed for just cause or to a person who, on termination of employment, is entitled to a retirement pension.

The maternity protection provisions grant 17 weeks of maternity leave — 11 weeks before and six weeks after childbirth — and ensure job security to women absent from work because

of pregnancy. To be eligible for maternity leave, a woman must have been continuously employed by her employer for 12 months. The Code provides for voluntary prenatal leave up to 11 weeks before the anticipated date of delivery, and this period extends to the actual date of confinement.

The Code prohibits an employer from paying men and women employees at different rates if they work in the same establishment at equally demanding jobs under the same or similar conditions. It also prohibits an employer from dismissing, laying off or suspending an employee solely because of garnishment.

Fair wages policy. Wages and hours on government construction contracts are regulated by the Fair Wages and Hours of Labour Act and Regulations. The rates are never less than the minimum hourly rate prescribed by Part III (Labour Standards) of the Canada Labour Code. Wages and hours of work on contracts for equipment and supplies are regulated by Order in Council.

Safety of employees. Part IV of the Canada Labour Code (Safety of Employees) incorporates the Canada Labour (Safety) Code of 1968, which was the first general safety legislation passed by the Parliament of Canada. To ensure safe working conditions for all employees in industries and undertakings under federal jurisdiction, Part IV provides for all the elements of a complete industrial safety program; obliges employers and employees to perform their duties in a safe manner and authorizes the making of regulations for dealing with occupational safety problems; complements other federal laws and provincial legislation; authorizes advisory committees and special task forces to assist in developing the program under continuous consultation among federal and provincial government departments, industry and organized labour; and provides for research into causes and prevention of accidents and for an extended safety education program. Employees of the Public Service of Canada, although not covered by Part IV of the Canada Labour Code, are given equivalent protection under standards, issued by Treasury Board, complementary to the safety and health regulations of Part IV of the Code. Regional safety officers and federally authorized provincial inspectors enforce the safety regulations.

As of January 31, 1975, regulations were in force governing coal mine safety, elevating devices, first aid, machine-guarding, noise control, hand tools, fire safety, temporary work structures, confined spaces, lighting, boilers and pressure vessels, building safety, dangerous substances, electrical safety, materials handling, protective clothing and equipment, sanitation, hours of service in the motor transport industry, and accident investigation and reporting.

8.1.3.3 Provincial labour legislation

Industrial relations. All provinces have legislation similar in principle to Part V of the Canada Labour Code, designed to establish harmonious relations between employers and employees and to facilitate the settlement of industrial disputes. These laws guarantee freedom of association and the right to organize, establish machinery (labour relations boards or other administrative systems) for the certification of a trade union as the exclusive bargaining agent of an appropriate unit of employees, and require an employer to bargain with the certified trade union representing his employees.

Alberta, Ontario, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland have special provisions in their general labour relations legislation dealing with accreditation of employers' organizations in the construction industry. In British Columbia accreditation provisions are not limited to the construction industry. Under every jurisdiction the legislation requires that the parties comply with conciliation or mediation procedures before a strike or lockout may legally take place. Every collective agreement must provide for the final settlement of disputes arising out of interpretation or application of the agreement without stoppage of work. Strikes and lockouts are prohibited during the term of a collective agreement. Unfair labour practices are prohibited under every legislation. In some provinces labour relations for "special groups" namely teachers, municipal and provincial policemen, municipal firemen, hospital workers, civil servants and employees of Crown corporations are regulated by special legislation.

Employment standards. Most provincial and territorial jurisdictions have legislated some or all of the recognized basic standards, such as: annual vacations with pay, statutory holidays, hours of work and overtime rates, maternity protection, minimum wage rates and termination of employment.

Hours of work. In Alberta and British Columbia hours are limited to eight a day and 44 a week, and in Ontario to eight a day and 48 a week. One and a half times the regular rate is to be paid after eight and 44 hours in Alberta and after eight and 40 in British Columbia. The Ontario Act requires, with some exceptions, that one and a half times the regular rate be paid for work done, beyond 44 hours. The Manitoba and Saskatchewan Acts do not limit daily and weekly hours but require the payment of one and a half times the regular rate if work is continued after eight and 40 hours. In Nova Scotia, Newfoundland and Prince Edward Island one and a half times the regular rate must be paid after 48 hours in a week, in Quebec after 45 hours and in New Brunswick after 44 hours. One and a half times the regular rate is to be paid after standard hours of eight a day and 44 a week in the Northwest Territories and eight a day and 48 a week in the Yukon Territory. Some exceptions are provided for in all Acts. No general standard of hours of work are in effect in New Brunswick or Newfoundland.

Minimum wages. All jurisdictions have enacted minimum wage legislation to ensure adequate living standards for workers. These laws vest authority in a minimum-wage-fixing board or the Lieutenant Governor in Council to establish minimum wages for employees. In most provinces minimum wage orders now cover practically all employment. Domestic service in private homes is excluded in all provinces except Newfoundland and Prince Edward Island. Farm labour is also excluded except in Newfoundland, but in several provinces people employed in farm-related occupations are covered. Minimum wage rates apply in Manitoba to those employed in selling horticultural or market garden products grown by another person, in Saskatchewan to those in egg hatcheries, greenhouses, nurseries and brush-clearing operations, and in Alberta and Prince Edward Island to farm workers employed in commercial undertakings. Minimum wage rates set by the orders apply throughout the province and are the same for both sexes. Many jurisdictions also set special minimum rates for young workers.

As of August 1, 1975, the minimum hourly wage rates for experienced adult workers were as follows: Newfoundland \$2.20, Prince Edward Island \$2.05, Nova Scotia \$2.25, New Brunswick \$2.30, Quebec \$2.60, Ontario \$2.40, Manitoba \$2.30, Saskatchewan \$2.50, Alberta \$2.50, British Columbia \$2.50, Northwest Territories \$2.50 and Yukon Territory \$2.70.

Regulation of wages and hours in certain industries. Apart from general hours-of-work laws, other statutes regulate working hours in some industries. Industrial standards legislation is in effect in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Saskatchewan and Alberta. These laws provide that a schedule of wage rates and hours of work agreed on by a representative group of employees and employers in an industry or trade may, with government approval, be given statutory effect by Order in Council. Such wage rates and hours then become the minimum terms of employment for the entire industry or trade in the area. An advisory committee, usually equally representative of employers and employees, is established to assist in enforcing a schedule. This type of legislation is used fairly extensively in the building trades, the clothing industries, barbering and a few other industries. In Newfoundland, Nova Scotia and New Brunswick schedules have been issued only for certain construction trades in some areas. In Ontario schedules for the garment trades and the fur industry apply throughout the province and a substantial number of schedules apply to various construction trades.

Under the Quebec Collective Agreement Decrees Act, certain terms of a collective agreement, including those dealing with hours and wages, may be made binding on all employers and employees in the industry concerned in a defined area, provided the parties to the agreement represent a sufficient proportion of the industry. The standards made binding under this procedure are contained in a decree, which has the force of law. Approximately 85 decrees applying to the garment trades, barbering and hairdressing, commercial establishments, garage and service stations, and other industries and services are in effect; a number of them apply throughout the province. Working conditions in the construction industry are governed by decrees under a separate Act — the Construction Industry Labour Relations Act, 1968.

The Construction Industry Wages Act in Manitoba, which applies to both private and public construction work, provides for setting minimum wage rates and maximum hours of work at regular rates for employees in the construction industry, on the recommendation of a board equally representative of employers and employees, with a member of the public as chairman. Under this Act annual schedules set the regular work week and hourly wage rates for various classifications of workers in the heavy construction industry, in the Greater Winnipeg building construction industry, in rural building construction and on major building projects.

Annual vacations and public holidays. All jurisdictions have annual vacations legislation applicable to most industries. The general standard is two weeks. In Manitoba workers are entitled to three weeks after five years of service, and in Saskatchewan three weeks after one year and four weeks after 13 years (with a gradual reduction to result in four weeks after 10 years as of July 1, 1978). Several jurisdictions, including the federal, Alberta, British Columbia, Manitoba, New Brunswick, Nova Scotia, Ontario, Saskatchewan, the Yukon Territory and the Northwest Territories have enacted legislation of general application dealing with public holidays. The number of holidays varies from six to nine and the provisions for payment also vary.

Vacation pay equals 4% of annual earnings in Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick, the Yukon Territory, the Northwest Territories, Quebec and Ontario (2% in the first year); in Manitoba and Alberta, regular pay; and in Saskatchewan 3/52nds of annual earnings. The federal rate is 4%.

Termination of employment. As in the federal jurisdiction, eight provinces have legislation requiring an employer to give notice to the individual worker whose employment is to be terminated. In Saskatchewan and Prince Edward Island an employer must give an individual employee one week's written notice of termination; in Manitoba and Newfoundland, one regular pay period. In Alberta, Nova Scotia and Ontario the length of notice varies with the period of employment. In Ontario and Nova Scotia: three months to two years, one week; two to five years, two weeks; five to 10 years, four weeks; 10 years or more, eight weeks. Nova Scotia is similar to Ontario except that an employee with at least 10 years' service may not be discharged without just cause. In Alberta: three months but less than two years, seven days; two years or more, 14 days. Quebec requires the employer of a domestic, a servant, journeyman or labourer to give one week's notice of termination if the employee is hired by the week, two weeks notice if hired by the month and a month's notice if hired by the year. Alberta, Manitoba, Newfoundland, Nova Scotia, Prince Edward Island and Quebec require an employee to give similar notice before quitting his job.

Four provinces require an employer to give advance notice of a planned termination of employment or lay-off of a group of employees. The Manitoba and Ontario group notice requirements apply when an employer plans to terminate the employment of 50 or more persons within four weeks or less. The length of notice is related to the number of workers involved. In Manitoba the requirements are: 50-100 employees, 8 weeks; 101-300, 12 weeks; over 300, 16 weeks. In Ontario: 50-199, 8 weeks; 200-499, 12 weeks; 500 or more, 16 weeks. The Nova Scotia and Quebec group notice requirements apply when an employer contemplates the dismissal of 10 or more employees within a period of two months. Again, the length of notice required varies with the number of workers involved: 10-100, two months; 101-300, three months; 301 and over, four months.

Maternity protection. Several provinces have legislation to ensure the health and job security of women workers before and after childbirth. The British Columbia and New Brunswick Acts provide for six weeks leave before childbirth and six weeks after; the Manitoba and Nova Scotia Acts allow 11 weeks before and six after. Ontario provides for a minimum of 17 weeks' leave. In Saskatchewan, the Act provides for 12 weeks before and six weeks after. The postnatal leave is compulsory, unless a medical doctor authorizes an earlier return to work. In all jurisdictions, the right to maternity leave is supplemented by a guarantee that an employee will not lose her employment because of absence on maternity leave.

Anti-discrimination laws. Laws to ensure fair employment practices have been enacted throughout Canada. These include employment and employment-related subjects such as membership in trade unions. All provinces have augmented this legislation to form a human

rights code. Most of these codes cover general matters, employment and employment-related subjects, and occupancy and property matters.

Most jurisdictions prohibit discrimination on grounds of race, religion, national origin, colour, sex, age and marital status. In selected cases the prohibited grounds include political beliefs, ethnic origin, physical handicap, creed and source of income.

Equal pay provisions are in force everywhere in Canada. Criteria for determining the meaning of equal work vary from one act to another. Methods of enforcement also vary.

Apprenticeship. All provinces have apprenticeship laws providing for an organized procedure of on-the-job training and school instruction in designated skilled trades, and statutory provision is made in most provinces for issuing qualification certificates, on application, to qualified tradesmen in certain trades. In some provinces legislation is in effect making it mandatory for certain classes of tradesmen to hold a certificate of competency.

Accident prevention. In Canada the provincial legislatures have the power to enact laws and regulations concerning the protection of workers against industrial accidents or diseases. Legal standards designed to ensure the safety, health and welfare of persons employed in industrial and commercial establishments, in mines and quarries and in other work places exist in all provinces. The authorities responsible for the administration of such standards are, in the main, the departments of labour, health and mines, and the workmen's compensation boards.

General safety laws and regulations cover a great part of all employment in the country except agriculture, mining and domestic service. They deal with most aspects of industrial safety and health in the working environment. Safeguards for the protection of workers are established with respect to such matters as sanitation, heating, lighting, ventilation, the guarding of dangerous machinery, etc.

Other safety laws and regulations are of a more specific application. They are concerned with hazardous equipment and installations such as boilers and pressure vessels, electrical installations, elevating devices and gas and oil burning equipment. Others are directed toward hazardous industries such as mining, construction, excavation, logging, etc.

Safety inspection is provided for in all provinces. An inspector has the power to give directions for the carrying out of any matter regulated by the legislation. Penalties exist where an employer contravenes any provision of an occupational safety act or regulation or where he fails or neglects to comply with a direction made by a safety inspector.

Workmen's compensation. In Canada, workmen's compensation laws are within the competence of the provincial legislatures and are applicable to the majority of employers in each province. In all provinces compensation is provided for workers in most types of industries, for personal injuries arising out of and in the course of employment unless the disablement is for less than a stated number of days or where the injury is attributable solely to the worker's serious and wilful misconduct and does not result in death or serious disablement. Compensation is also payable for specified industrial diseases.

Each workmen's compensation act provides for an accident fund administered by a workmen's compensation board to which employers are required to contribute and from which compensation and medical benefits are paid. The acts thus provide for a system of compulsory collective liability, relieving employers of individual responsibility for accident costs. The assessment rate for each class of industry is fixed by the board according to the hazards of the class.

A worker entitled to receive compensation under a workmen's compensation act has no right of action against his employer for injury from an accident occurring in the course of employment or for an industrial disease.

Various types of benefits are provided for a worker protected by workmen's compensation legislation. Benefits for disability are based on a percentage of average weekly earnings subject to an annual ceiling. Persons having a permanent or temporary total disability are presumed not to be able to work at all and receive 75% of their average weekly earnings for as long as the disability lasts. Partial disablement entitles a worker to a proportionate compensation. Medical and hospital benefits are provided without limitation regardless of a waiting period.

One of the primary objectives of the compensation process in Canada is the rehabilitation of the injured worker. The boards may adopt any means considered expedient to aid in getting workers back to work and in lessening any handicap.

When a worker dies from an industrial accident or disease, the dependents are entitled to a monthly payment fixed by legislation. However, for recent cases in Alberta and Manitoba, the widow receives the permanent total disability pension the deceased worker would have been entitled to, if he had lived. This is also true for a widow with two or more children in British Columbia. In all provinces payments are made in respect of children. In Ontario and Quebec such payments may continue for as long as the child is pursuing his studies.

8.2 The labour force

8.2.1 Labour force (monthly surveys)

Since 1946 reliable information for analysis of employment in Canada, at the national level and for the five major regions, has been provided through a labour force survey. Between November 1945 and November 1952, quarterly surveys were taken and since then the survey has been carried out monthly. The sample used in the survey has been designed to represent all persons in the population 14 years of age and over, residing in Canada, with the exception of residents of the Yukon Territory and the Northwest Territories, Indians living on reserves, inmates of institutions and members of the Armed Forces. Interviews are carried out in approximately 30,000 households chosen by area sampling methods across the country. In the survey, people are classified on the basis of their activity during the reference week, i.e. the week prior to the survey interview week.

The civilian labour force is composed of that portion of the civilian non-institutional population 14 years of age and over who, during the reference week, were employed or unemployed.

The employed include all persons who, during the reference week, did any work for pay or profit; did any work which contributed to the running of a farm or business operated by a related member of the household; or had a job but were not at work because of bad weather, illness, industrial dispute or vacation, or because they were taking time off for other reasons. People who had jobs but did not work during the reference week and who also looked for work are included in the unemployed as people without work and seeking work.

The unemployed are all those who, through the reference week, were without work and seeking work, i.e. did not work during the reference week and were looking for work, or would have been looking for work except that they were temporarily ill, were on indefinite or prolonged lay-off, or believed no suitable work was available in the community; were temporarily laid off for the full week, i.e. were waiting to be called back to a job from which they had been laid off for less than 30 days.

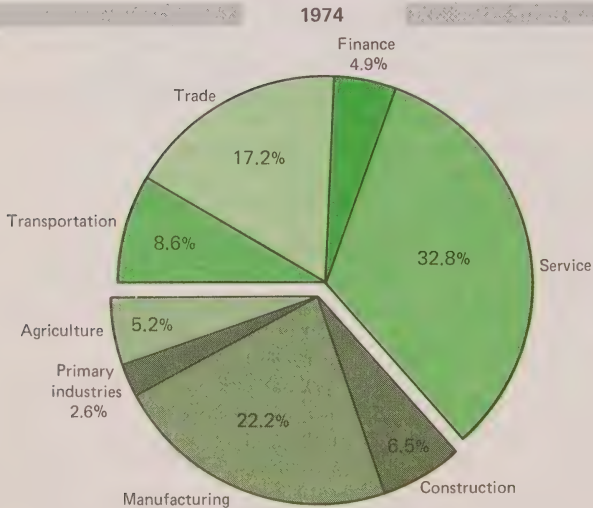
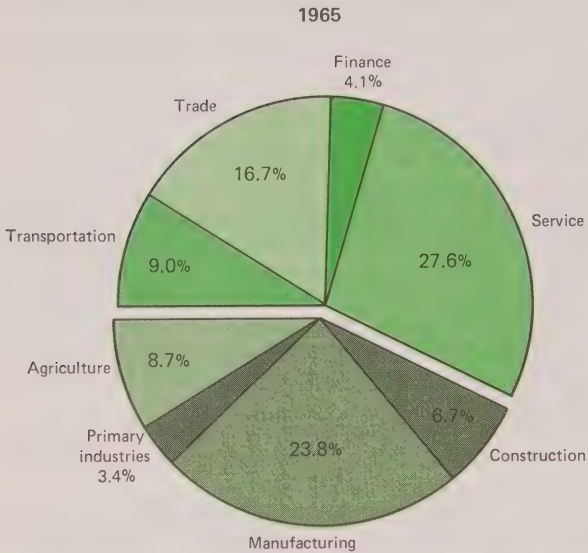
Those not in the labour force include all civilians 14 years of age and over (exclusive of the institutional population) who are not classified as employed or unemployed. This category includes people going to school, keeping house, too old or otherwise unable to work, and voluntarily idle or retired. Housewives, students and others who worked part-time are classified as employed or, if they looked for work, as unemployed.

Because they are based on a sample of households, estimates derived from the labour force survey are subject to sampling error. In the design and processing of the survey, extensive efforts are made to minimize the sampling error; in general, the percentage of error tends to decrease as the size of the estimate increases. A statistical measure of the sampling error is given in the Statistics Canada publication *The labour force* (Catalogue No. 71-001).

The period 1965-74 was one of rapid expansion as the actual labour force increased by 2.5 million persons or 35.3%. The number of women in the labour force increased by 60.1%, compared to the increase of 25.1% experienced by men. The total participation rate (the labour force as a percentage of the population 14 years of age and over) continued to increase and reached a level in 1974 of 58.3% compared with 54.4% in 1965.

In the decade under review the male participation rate declined from 1965 to 1971 and increased from 1971 to 1974. In 1974 the rate was 77.3% compared with 77.9% in 1965 (see Table 8.2). While there was a decline in the total male participation rate, there was an increase for men aged 14-24 over the period under review. The rate increased to 63.4% in 1974 from 57.2% in 1965.

Employment by industrial group, 1965 and 1974



The accelerated entry of women into the labour force has more than compensated for the decline in male labour force participation; in 1974 the rate was 39.7% compared with 31.3% in 1965 (see Table 8.2). The participation rate of women increased over the period in all age groups except for those 65 years and over. This increase was the result of changes in the rate of both major age groups. The participation rate for females 14-24 increased from 39.0% in 1965 to 48.1% in 1974 and that for women 25 years and over from 28.6% in 1965 to 36.5% in 1974.

The total number of persons employed in Canada rose by 27.8%, from 7.2 million in 1966 to 9.1 million in 1974 (Table 8.1). Although employment increased in all provinces (Table 8.3), the percentage increases varied markedly — from 9.0% (29,000) in Saskatchewan to 46.9% (318,000) in British Columbia. The increases in the other provinces were 28,000 (22.0%) in Newfoundland, 7,000 (20.6%) in Prince Edward Island, 43,000 (18.3%) in Nova Scotia, 37,000 (19.5%) in New Brunswick, 411,000 (20.4%) in Quebec, 868,000 (32.7%) in Ontario, 63,000 (18.1%) in Manitoba and 181,000 (32.9%) in Alberta.

Table 8.4 illustrates the changes over the decade in the distribution of actual employment by industry. The proportion of persons employed in the service-producing industries continued to increase; the proportion in the goods-producing industries indicated a corresponding decline. Transportation, trade, finance and services accounted for 63.5% of total employment in 1974 compared with 57.4% in 1965. Conversely, the goods-producing industries, comprising agriculture, primary industries, manufacturing and construction, dropped from 42.6% of total employment in 1965 to 36.5% in 1974. The most significant changes occurred in services and in agriculture. The share of total employment increased from 27.6% to 32.8% in services and decreased from 8.7% to 5.2% in agriculture. By occupation (Table 8.5), the largest group of employed was the clerical at 1.5 million (16.8%), followed by the service group at 1.1 million (12.1%). The smallest occupational group among the employed was the fishing, hunting and trapping group with 25,000 persons (0.3%).

On the average in 1974, over 87% of the employed were full-time workers (people usually working 35 hours or more a week). Men working full-time represented nearly 61% of total employment while women represented nearly 26%. The number of women in part-time employment represented 9% of total employment. Men working part-time however, accounted for only 4% of total employment.

Unemployment as a percentage of the labour force averaged between 3.6% in 1966 and 6.4% in 1971; it averaged 5.4% in 1974. The rates for males and females in all age groups showed increases between 1965 and 1974 (see Table 8.2). Persons not in the labour force averaged 6.9 million in 1974 compared with 6.0 million in 1965, an increase of 15.3%.

8.2.2 Labour force (1971 Census)

At each decennial census of Canada, questions are asked of persons 15 years of age and over relating to their employment status and present work activities. The census questions have the advantage that they can provide far more detailed information on the occupational and industrial structure as well as other characteristics of the labour force than the regular monthly surveys in terms of both geographical areas and classifications. A few short summary tabulations from the most recent 1971 Census are presented in Tables 8.6 - 8.12. Further information is available in the many census reports issued on these and other aspects of Canada's labour force (see 1971 Census, Statistics Canada Catalogue No. 94-701 to 94-789).

Because of differences in coverage, methodology, reference period, etc., data from the census are in some ways not comparable with those collected by the monthly labour force survey. Of particular importance among these differences are those of coverage and actual questions asked, even though the fundamental concepts are the same. As stated in the preceding section, the small labour force survey sample (about 30,000 households) includes persons 14 years and over but excludes the Yukon Territory and Northwest Territories, Indian reserves, members of the Armed Forces, overseas households and inmates of institutions. The 1971 Census questions were asked of all persons 15 years and over in a 33⅓% sample of households (about 2 million households) except that inmates of institutions were automatically classified as not in the labour force.

Foreign-born persons in the labour force. The labour force at the June 1, 1971 Census included all persons 15 years and over who, during the week preceding the enumeration,

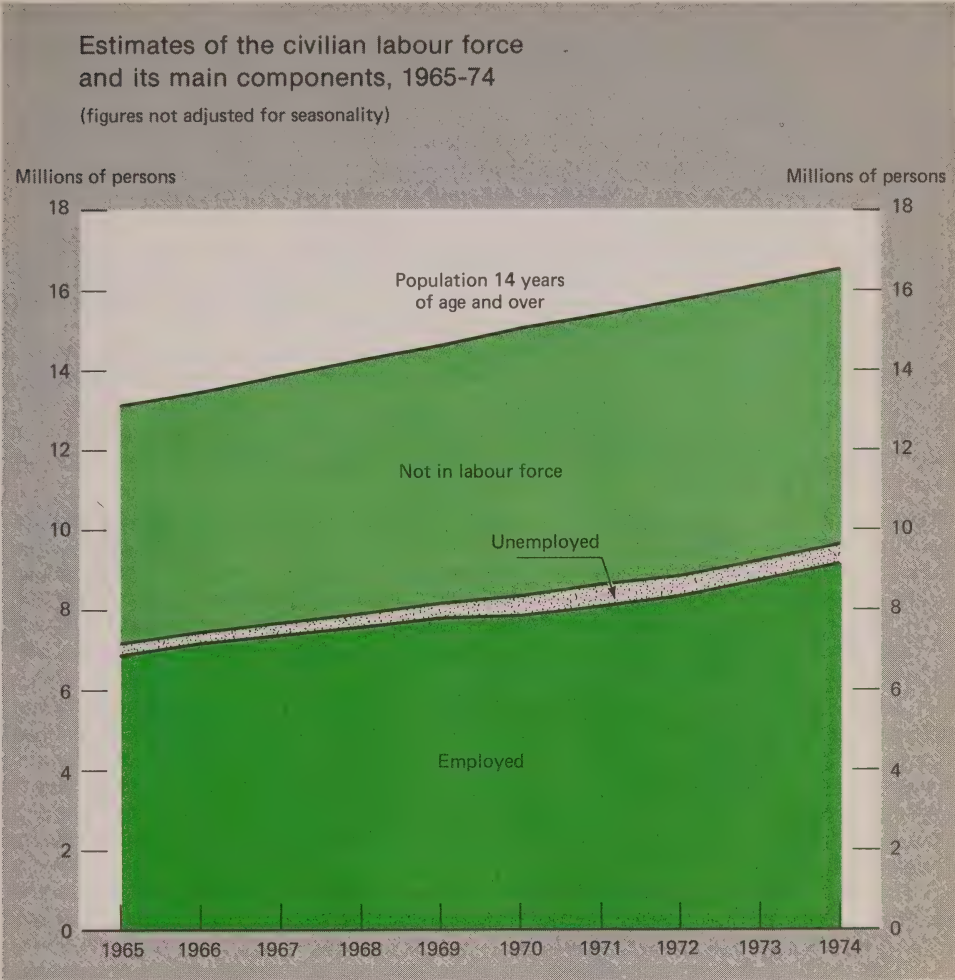
worked for pay or profit, did unpaid work in a family farm or business, looked for work, were on temporary lay-off or had jobs from which they were temporarily absent because of illness, vacation, strike, etc. Results from the 1971 Census indicate that immigrants constituted 20% of the labour force. Tables 8.6 and 8.7 present data on the number of immigrants by country of origin and region of Canadian residence in 1971 and by age, sex and period of immigration to Canada. According to these figures, more than four fifths of the immigrants in the labour force come from Europe and one quarter from Britain. Over half the immigrants are concentrated in Ontario where they form more than a quarter of the labour force, as they do in British Columbia, while they make up less than 5% of the labour force in the Atlantic provinces. Table 8.7 indicates that immigrants tend to be older than the native-born, with only 15% under the age of 25 compared with 26%, and are to be found mainly in the 25-54 age range (29%). The proportion of immigrant workers aged 65 and over is more than twice that of native-born workers.

Class of worker. In connection with the questions on occupation and industry, the respondent was asked to report whether he was mainly working for wages and salary or was self-employed or was working without pay in a family business or farm. Table 8.8 provides 1961 and 1971 data for individuals in the experienced labour force, which for 1971 is defined as the total labour force minus persons looking for work, who last worked prior to January 1, 1970 or who never worked. For 1961 persons who never worked were excluded but persons looking for work but who had not worked since January 1, 1960 were included. The figures are not strictly comparable because of these differences in definition and because the question was asked in greater detail in 1971, in an attempt to isolate individuals such as executives with large shares in incorporated businesses who tend to report themselves as self-employed rather than as paid workers. It is uncertain how many of these individuals counted themselves as self-employed in 1961. However, even assuming that all of them did and adjusting the 1971 figures accordingly (to yield a count of 799,555, not shown in the Table), the self-employed have experienced at least a 15% decline in absolute terms since 1961, dropping from 14.5% of the labour force to 9%. On the other hand, paid workers have increased from 83% to 87%, while the proportion of unpaid family workers has risen slightly from 2.5% to almost 3.3%. The increase in this group is attributable to the more than twofold rise in the number of women in this category. However, response and processing errors have inflated the 1971 count of unpaid female family workers by about 25% and the true increase is therefore somewhat less than twofold.

Persons who worked during 1970. In addition to information on the total (or current) labour force the 1971 Census also provides data on weeks worked during 1970, whether full-time or part-time, as well as average employment income received (Table 8.9). Respondents were asked to report 1970 income under 10 headings, covering income from employment, from government transfer payments and from other sources. Employment income was reported under three headings: income from wages, salaries, tips and commissions, net income from business or professional practice and net farm income. In the Table, average employment income is computed only for those persons who, having worked in 1970, actually received payment for such work during the calendar year 1970. Unpaid family workers, persons who worked for payment in kind only and persons who may have worked during the Christmas season but who were not paid until 1971 are excluded.

The figures in Table 8.9 indicate that, while most individuals worked full-time (82%) during 1970, a larger proportion of females (29%) than males (11.6%) worked part-time. On the other hand, only 68.6% worked full-year (40-52 weeks) while 63% worked both full-time and full-year.

Males had higher average employment income than females, double that of females in 1970. Even for part-time work, in which females outnumbered males, male employment income was more than 50% higher. For full-time work, both male and female full-year (40-52 weeks) average employment income (\$8,046 and \$4,749, respectively) was more than double part-year (1-39 weeks) average employment income (\$3,369 and \$1,922, respectively), with the increase for females slightly higher. Nonetheless, full-year full-time male employment income was about 69% higher than that for females, but it should be borne in mind that the occupational distribution of males differs considerably from that of females.



Labour force by industry. In the 1971 Census respondents were asked for the name of their employer and the type of business, industry or service the firm was engaged in. For those self-employed, the name of the firm and type of activity were requested. Because a revised industrial classification was used (see *Standard industrial classification manual*, Catalogue No. 12-501) special tabulations had to be made in order to compare 1971 data with 1961. Government-owned and operated establishments primarily engaged in activities assigned to other industries, such as transportation, communication (including the post office), liquor sales, health and educational services, were classified to those industries rather than to Public Administration. The “Public Administration and Defence” division covers establishments primarily engaged in activities such as enacting legislation, administering justice, collecting revenue and defence.

Table 8.10 shows the number of people 15 years of age and over in the labour force by sex and major industrial group for 1961 and 1971. Two significant changes are dramatically illustrated: the rapid growth of the tertiary or service sector of the economy and the increased participation of women in the labour force. Since 1961 the labour force in the primary industrial sector decreased by 174,335 or 20%, whereas the tertiary sector rose by 1,398,091

persons or 39%; the secondary sector, manufacturing and construction, increased by 22% over the decade. The number of women in the labour force rose from 1,766,332 in 1961 to 2,961,210 in 1971 with increases in all sectors but most particularly in the service sector (71%).

Table 8.11 shows the provincial distribution of the main industrial sectors. The number of people in the labour force in the primary industries declined in all provinces except British Columbia (where it rose 24%), and most particularly in Quebec (-39%); even in Saskatchewan, where the primary industries still account for 32% of the labour force, the decrease was 13%. In contrast to Saskatchewan, only 6% of Ontario's labour force is classified as being in the primary sector.

The secondary sector accounted for 29% of Canada's labour force in 1961 and 28% in 1971, when most provinces had between 18% and 25% of their labour force employed in this sector. In Quebec and Ontario 32% and 33%, respectively, were employed in manufacturing and construction, but in Saskatchewan the proportion was only 11%.

It is in the tertiary or service sector that growth has already been mentioned. Provincially, while both the number and proportion have risen in all provinces since 1961, Prince Edward Island now has 61% of its labour force devoted to service industries compared to 50% in 1961. Quebec too has altered its proportion considerably from 54% to 62%. In their over-all labour force breakdowns, Nova Scotia with 68% and British Columbia with 67% lead the country with over two thirds of their labour force in the service sector.

Occupation by sex. "Occupation" at the time of the 1971 Census, was determined by three questions summarizing the kind of work performed by the respondent during the week prior to the census. Persons who were not employed during that week were asked to provide similar information on the work performed over the longest period of employment since January 1, 1970. The classification of occupations is based on the Canadian Classification and Dictionary of Occupations of 1971 (see *Occupational classification manual*, Census of Canada 1971, Volume I, Catalogue No. 12-536).

Table 8.12 gives a breakdown of the labour force by sex, major occupational group, education and occupational training, for Canada at the time of the 1971 Census. Occupational training is that acquired during an apprenticeship or through a full-time vocational training course of not less than 3 months' duration. Courses accepted are those designed to develop or improve professional skills. Data appearing in this Table on post-secondary training and vocational training represent the number of persons claiming to have had such training without regard to earlier schooling.

For all occupations as a whole, women have a median level of schooling higher than that of men (11.4 years compared to 10.7). However, a higher proportion of men than women hold a university degree (7.9% as against 4.9%).

The teaching and related occupations group has the greatest number of university graduates of both sexes. While the management, administrative and related occupations group includes the second-largest grouping of male university graduates, the second-largest group of female university graduates is found in the clerical and related occupations.

8.3 Employment statistics

8.3.1 Employment, earnings and hours

Monthly records of employment have been collected from larger business establishments since 1921. The surveys currently conducted by Statistics Canada collect data on payrolls, per capita wages and salaries, hours of work, hourly and weekly wages and the number of salaried and wage-earning employees with their respective weekly salaries. Employment indexes are based on 1961=100; the data are compiled on the 1960 Standard Industrial Classification.

The survey covers all industries except agriculture, fishing and trapping, education and related services, health and welfare services, religious organizations, public administration and defence and private households.

The monthly employment statistics relate to the number of employees drawing pay in the last pay period in the month. Data are requested for all classes of employees except homeworkers and casual employees working less than one day in the pay period. Owners and firm members are also excluded. The respondents report the gross wages and salaries paid in the last pay period in the month, before deductions are made for income tax, unemployment

insurance, etc. The reported payrolls represent gross remuneration for services rendered and paid absences in the period specified, including salaries, commissions, piece-work and time-work payments, and such items as shift premiums and regularly paid production, incentive and cost-of-living bonuses. The statistics on hours relate to the regular and overtime hours worked by those wage-earners for whom records of hours are maintained, and also to hours credited to wage-earners absent on paid leave during the reported period. If the reported period exceeds one week, the payroll and hours data are reduced to weekly equivalents.

Employment. Table 8.13 indicates that, over the 1968-73 period, the industrial composite index of employment for Canada rose by 10.8%. Among the industry divisions showing gains over this period, services led with a 30.6% advance, followed by finance, insurance and real estate (20.0%), trade (20.0%), transportation, communications and other utilities (7.8%), manufacturing (6.4%) and mining (1.5%). Declines occurred in forestry (5.2%) and construction (8.0%) during the same period. Compared with 1972, the industrial composite index for 1973 was up 4.6%.

Annual average index numbers of employment for the years 1969-73 are shown by industrial division and group in Table 8.14, by province and by month for 1973 and 1974 in Table 8.15 and by metropolitan area and by month for 1973 and 1974 in Table 8.16.

Weekly earnings. Average weekly earnings have increased substantially in the years for which current payroll statistics have been collected, rising from \$23.44 in 1939 to \$102.83 in 1967 and \$160.46 in 1973. The upward movement gained momentum beginning in 1946 and average annual increases for the 1946-52 period were more than double those for the 1939-45 period. After 1952 the rate of increase, in percentage terms, fell somewhat, particularly during the 1959-62 period. In the recent period, gains have been 8.4% in 1972 and 7.5% in 1973. Annual index numbers of employment and average weekly earnings for 1971-73 are presented by industry, province and urban area in Table 8.17. Table 8.18 shows annual average weekly earnings by industrial division for the years 1969-73 and monthly averages for 1973 and 1974.

Hours and earnings of hourly rated wage-earners. The monthly survey of employment payrolls and man-hours covers statistics of hours of work and paid absence of those wage-earners for whom records of hours are maintained, together with the corresponding totals of gross wages paid; these wage-earners are mainly hourly rated production workers. Information on hours is frequently not kept by employers for ancillary workers nor, in many industries and establishments, for any wage-earners. Salaried employees are excluded by definition from the series. As a result of these exclusions, data are available for fewer industries and workers than are covered in the employment and average weekly earnings statistics.

During the period 1968-73 average weekly hours declined while average hourly earnings rose substantially. For the most part, upward wage-rate revisions in all industries were responsible for the increases. Technological changes, which in many cases involve the employment of more highly skilled workers at the expense of those in the lower-paid occupations, also contributed to the advance of average hourly earnings. As indicated in Table 8.19 from 1968 to 1973 average hourly earnings rose by 70.0% in construction, by 57.0% in mining and by 49.2% in manufacturing. During the same period, average weekly hours declined by 2.5% in construction, 2.2% in mining and 1.7% in manufacturing. Comparing 1973 to 1972 average hourly earnings increased by 11.1% in mining, by 9.9% in construction and by 8.8% in manufacturing; weekly hours rose 1.5% in mining and decreased by 1.0% in manufacturing and by 1.5% in construction. Table 8.20 presents average weekly hours and hourly earnings in specified industries and selected urban areas for 1971-73.

8.3.2 Estimates of labour income

Labour income, as shown in Table 8.21, is defined as the compensation paid to employees for services rendered comprising wages and salaries and supplementary labour income. It includes all such payments made to residents of Canada (Canadians employed by the federal government abroad are considered to be residents of Canada) except those made to the Canadian Armed Forces. Remuneration to the latter fits the definition of labour income but is excluded here as it is treated as a separate item in the national income accounts.

Wages and salaries include directors' fees, bonuses, commissions, taxable allowances and benefits. A gross concept has been adopted and wages and salaries are measured before deductions for employees' contributions to income tax, unemployment insurance, pension funds, etc. Supplementary labour income, which is defined as payments made by employers for the future benefit of employees, is composed of employers' contributions to employee welfare and pension funds including the Canada and Quebec Pension Plans, to workmen's compensation funds, and to unemployment insurance.

Estimates of labour income based on the 1948 Standard Industrial Classification (SIC) have been published for 1926-69; those based on the 1960 SIC were originally published in 1969 for the period 1951-68 and then projected to the end of 1971. The entire series 1951-71 has been revised, carried back to 1947 and projected to 1974.

8.3.3 Employer labour costs

The labour costs survey, instituted in 1967 as a joint Statistics Canada — Canada Department of Labour project, is designed to measure the content of the total pay package. The results are of value in collective bargaining, in improving estimates of labour income and in developing better productivity measures. The survey also provides cost data for the various items studied in the Canada Department of Labour's survey of working conditions. In addition, all levels of government use the data in developing labour policy. The survey is conducted each year in one or more major industry divisions. At present a particular industry is surveyed every three or four years. Consequently, sufficient data are not yet available to determine trends over a period of time. However, the results of the 1971 and 1972 surveys of the manufacturing and mining industries enable comparisons to be made between the years 1968 and 1971 and 1969 and 1972 for these industries.

In order to minimize the effects of general increases in salaries and wages, the labour cost estimates in Tables 8.22-8.25 are shown as percentages of payments made by the employer for regular work performed during normal working hours. Using the figures in Table 8.22, the actual cost of every \$100 in basic pay paid by an employer in manufacturing, on the average, for regular work, can be calculated to be \$128.14 in 1968 and \$128.60 in 1971. The corresponding figures for mining are \$134.87 in 1969 and \$134.66 in 1972.

The labour cost items studied reflect the differences in the nature of each industry and the occupations of those employed. The approximate ratios of salaried (office) employees to wage-earners (non-office) are: manufacturing 27:73; mining 30:70. However, since the occupations of salaried employees are different from those of other employees, the relative costs for each group are compared separately in Table 8.23.

The labour costs show that additional costs for time worked are more significant for wage-earners than for salaried employees and that such costs are substantial in the mining industry. These costs include overtime (straight-time and premium pay), shift work and payments made to employees for work performed under special conditions. In the mining industry, underground production bonuses for wage-earners account for some 6.5% of basic pay. Overtime costs for wage-earners are slightly higher in mining than in manufacturing. The results of the 1971 and 1972 surveys, however, show decreases in overtime costs in both industries in each three-year period.

Paid absence represents a significant additional cost to employers. The average cost for all employers expressed as a percentage of basic pay for regular work in manufacturing increased from 9.54% in 1968 to 10.58% in 1971. In mining, the cost of paid absence increased from 9.98% in 1969 to 11.17% in 1972. These increases in employer expenditure reflect the costs for additional paid holidays and for reductions in the service required for employees to qualify for longer vacations, in both industries. Table 8.24 illustrates the relative significance of the various components of paid absence for all employees, and for salaried employees and wage-earners separately. Employers usually provide sickness benefits for wage-earners through insurance plans rather than by continuing pay during illness. For salaried employees, on the other hand, the salary is usually continued. Many employers do not keep accurate records of absences for sickness and for personal leave; consequently the costs for these items are understated.

Miscellaneous payments to employees comprise termination pay, non-production bonuses, taxable benefits (such as board and lodging) and retroactive pay for a preceding year,

etc. Expressed as percentages of basic pay for regular work they range from 1.56% in manufacturing to 2.35% in mining. In both industries, these costs have remained static.

Employer payments to employee welfare and benefit plans comprise payments required under federal and provincial statutes and payments made to other plans, either voluntarily or as the result of collective agreements. Table 8.25 illustrates the relative significance of the various expenditures for all employees, and for salaried employees and wage-earners separately. The figures for workmen's compensation reflect the relative differences in the exposure of employees to industrial injury; figures for private pension plans indicate the numbers of employees who are employed in establishments which provide pensions in addition to the Canada and Quebec plans. The labour costs survey shows that for wage-earners in the mining industry the cost of pensions increased from 1.53% to 2.29%. The figures for life and health insurance plans include additional costs for weekly indemnity plans to provide benefits to wage-earners who are absent through illness. There were small increases in the expenditure for these plans which reflect the increases in costs and in benefits.

8.3.4 Wage rates, hours and working conditions

Statistics on occupational wage rates by industry and locality, with standard weekly hours of labour, are compiled by the Canada Department of Labour and published in the annual report *Wage rates, salaries and hours of labour*. The statistics are based on an annual survey covering some 38,000 establishments in most industries and apply to the last normal pay period preceding October 1. Average wage rates (excluding overtime) of time-workers and average straight-time earnings of piece-workers and other incentive workers for selected occupations are shown separately in the report but are combined to calculate the industry index numbers shown in Table 8.26. The indexes measure changes in wage rates for non-office employees below the rank of foreman. They do not, however, provide a basis for comparing the level of wages in one industry with that in another. The construction wage index rose from 223.7 in 1971 to 239.9 in 1972, that of mining from 169.9 to 190.1, services from 178.0 to 191.7 and local government from 200.2 to 217.2. Information on concepts and methods of developing these statistics is given in the annual report.

Table 8.27 presents average wage and salary data for 12 Canadian cities on October 1, 1973. Hourly and weekly wage rates are listed for 23 occupations in the construction and manufacturing industries; salaries are specified for men and for women engaged in several office occupations.

Table 8.28 gives summary data on working conditions of plant and office employees in manufacturing industries and in all industries for the years 1973-74. The percentages in this table denote the proportions that plant or office employees of establishments reporting specific items bear to the total number of all such employees in all establishments replying to the survey; they are not necessarily the proportions of employees actually covered by the various items. Further details and additional information are given in the annual report *Working conditions in Canadian industry*, compiled and published by the Canada Department of Labour and based on a survey at October 1 each year of 38,000 reporting units.

8.4 Pension plans

According to a survey carried out by Statistics Canada in 1970, the number of pension plans in Canada increased by nearly 80% from 1960 to 1970. In 1960, 9,000 plans covered 1.8 million persons and by 1970, 16,000 plans covered 2.8 million. With coverage at this level, nearly 40% of paid workers in Canada participated in a pension plan.

Pension plans were in operation in virtually all industrial sectors, but the degree of coverage varied widely from industry to industry. The most comprehensive coverage was in public administration and defence, where almost all of the 761,000 employees of all government levels, the Armed Forces and the RCMP participated in a plan. Two out of three paid workers in mining and over 40% in manufacturing were covered. In transportation and communication, with some of the oldest and largest plans in the country such as those in the railway, telephone and trucking companies, almost half of the paid workers (337,800) had post-retirement protection. Of the employees working in finance, insurance and real estate about 45% were covered; approximately one in four workers in community, business and

personal services — which includes hospitals, religious and welfare organizations and professional agencies, etc. — participated in occupational pension programs. Construction, with 107,400 plan members, had 23% of the workers covered; and trade, both retail and wholesale, with 142,500 participants, provided coverage for 13% of workers in the industry.

Of the more than 16,000 pension plans in Canada at the beginning of 1970, 11,000 — nearly 70% — were funded by insurance companies, but these accounted for less than 15% of the members or 398,700 out of 2.8 million. Plans with the largest coverage were those designed for government employees; employee contributions are paid into government consolidated revenue funds which are not held in the form of cash or invested securities. Although only 19 in number, these plans applied to a total of 607,800 public servants including those covered by the federal superannuation plan, the Armed Forces, the RCMP and public servants in five provinces.

Aside from these public service plans, the larger plans tended to use either personal or corporate trustees as funding agencies. Although only one quarter of all occupational plans were trustee, they covered more than 60% of the members — some 1.7 million out of the total of 2.8 million persons.

Total contributions paid by and on behalf of the 2.8 million members in 1970 amounted to over \$1,700 million with more than \$1,000 million paid into trustee funds. With an annual cash inflow of this magnitude, trustee pension funds have become one of the largest single pools of money in the country, growing at a rate of 10% to 12% annually, with the book value of assets accumulated by these funds reaching a record total of \$16,171 million by the end of 1973. Because the growth of these funds is so rapid and the total accumulated so large, they are surveyed annually by Statistics Canada; the results are published in *Trusted pension plans, financial statistics* (Catalogue No. 74-201). A summary tabulation of the key financial data related to these funds is presented in Table 8.29.

The Canada and Quebec Pension Plans are discussed in Chapter 6.

Federal government annuities. Since 1908 the federal government has sold annuities and industrial pension plans under the Government Annuities Act. Decreased need for this type of service has resulted in the program's reduction. No salesmen have been employed since 1967 but annuities are still available under the Act to those who ask for them. They are now administered by the Unemployment Insurance Commission.

8.5 Unemployment insurance

Unemployment insurance has been part of Canada's social and economic life since the Unemployment Insurance Act was passed in 1940. Since that time various amendments have brought new categories of workers into the plan and contributions and benefit rates have been raised periodically to meet changing economic conditions. However, until recently, the basic structure of the plan remained unaltered.

In 1968, when Parliament approved upward revisions of both contributions and benefit rates and broadened the scope of coverage, the Unemployment Insurance Commission was instructed to investigate the program and to recommend appropriate changes in philosophy and structure. The Unemployment Insurance Act, 1971, effective June 27, 1971, was the result of extensive study; its basic objectives were to provide assistance to cope with interrupted earnings resulting from unemployment, including unemployment from illness, and to co-operate with other agencies engaged in social development.

The 1971 Act extended coverage to all regular members of the labour force (effective January 2, 1972) for whom there exists an employer-employee relationship. The only non-insurable employees are those who earn less than 20% of the maximum weekly insurable earnings or less than 20 times the provincial hourly minimum wage, whichever is less. Coverage, contributions and benefit entitlement cease at age 70.

Employers and employees absorb the cost of initial benefits and administration; the employer rate is 1.4 times the employee rate. The government share is confined to the cost of extended benefits and the excess cost of initial benefits resulting from a national unemployment rate greater than 4%. There is no fund and employer and employee contributions are adjusted yearly. In 1974 the rate of employee contributions was \$1.40 per \$100 of insurable earnings with a maximum of \$2.38 a week. The Department of National Revenue, Taxation collects the contributions. Persons formerly not contributing either

because of their occupation or by virtue of being over the salary ceiling are paying a preferred rate for the first three years. For those who had been excluded because of their occupation, the preferred rate is portable. However, persons formerly excluded because of the salary ceiling pay the preferred rate only as long as they remain with the employer they were with on January 2, 1972.

Under the new program, the duration of benefit is not determined solely by how long a person has worked. A claimant can draw benefits for a maximum of 51 weeks depending on his employment history and prevailing economic conditions, providing he has contributed for at least eight weeks in the last 52 and he is available, capable and searching for work. Persons with 20 or more weeks of insured earnings (a "major labour force attachment") are eligible for a wider range of benefit that includes a pre-payment of three weeks of regular benefit for work-shortage lay-offs, benefit payments when the interruption in earnings is caused by illness or pregnancy, and three weeks retirement benefit for older workers.

Sickness benefit is available for a maximum of 15 weeks for persons with a major labour force attachment whose earnings are interrupted by illness, injury or quarantine (excluding workmen's compensation). If a person is taken ill while on regular claim, sickness benefit is available but the combined duration of benefits during the initial benefit period cannot exceed 15 weeks.

Maternity benefit is available for eight weeks before confinement, the week of confinement and six weeks after, to women who have had a major labour force attachment. They must also have been part of the labour force at least 10 of the 20 weeks prior to the 30th week before the expected date of confinement.

Retirement benefit, available for three weeks, is paid in a lump sum to claimants with a major labour force attachment who are 65-70 years of age and who have signified they have left the labour force by applying for the Canada Pension Plan or the Quebec Pension Plan, and to persons over 70 years of age. The benefit is paid without a waiting period and without regard to earnings or availability.

The benefit rate for all claims is two thirds of average insured earnings in the qualifying period to a weekly maximum of \$113 and a minimum of \$20 in 1974. For claimants with dependents and whose average qualifying earnings are equal to or less than one third of the maximum weekly insurable earnings, the benefit rate is 75%. During later stages of benefit all claimants with dependents draw benefit at 75% of qualifying earnings subject to the \$113 maximum. The maximum insurable earnings and, therefore, the maximum benefit are subject to annual adjustment based on an index calculated from earnings of Canadian employees.

Income from employment in excess of 25% of the benefit rate is deducted. In the case of sickness and maternity, proceeds of wage-loss policies are deducted after the waiting period. All work-related income is deducted both during the waiting period and after the waiting period has been served.

The statistics in Table 8.30 summarize the Unemployment Insurance Commission's activities in the years 1970-74. Figures prior to July 1971 are affected by the Unemployment Insurance Act of 1955, which is described in the *1973 Canada Year Book* p 352.

To assess the impact of changing economic conditions on the insurance program, current operational data, such as claims filed and processed and payments made, are collected and published monthly by Statistics Canada. Current claims and payment data are useful for administrative purposes and are also a source of information to the public regarding financial and other aspects of the program. In addition to the monthly data on the operation of the Unemployment Insurance Act, detailed data on persons employed in insurable employment and benefit periods established and terminated are compiled annually and published in *Benefit periods established and terminated under the Unemployment Insurance Act* (Catalogue No. 73-201). Data on persons insured under the Act are obtained from a sample of persons in insurable employment each year. Persons on claim are included.

8.6 Employment injuries and workmen's compensation

Fatal employment injuries. Data on fatal employment injuries compiled by the Canada Department of Labour are collected from provincial workmen's compensation boards, the

Canadian Transport Commission, other government authorities and press reports. In 1973, 1,227 industrial workers sustained fatal injuries. Collisions, derailments or wrecks caused 283 deaths; being struck by an object, 251; falls and slips, 235; being caught in, on or between objects or vehicles, etc., 140; inhalations, contacts, absorptions, ingestions and industrial diseases, 115; conflagrations, temperature extremes and explosions, 64; contact with electric current, 51; over-exertion, 34; and the remaining 54 were the result of various miscellaneous accidents. Table 8.31 presents statistics on fatal employment injuries in 11 industries for the years 1971-73. Employment injuries, extent of disability and amount of compensation paid are reported by province for 1972 and 1973 in Table 8.32. In 1973, 980,789 injuries resulted in \$420 million in compensation compared with 849,899 injuries and \$359 million in compensation in 1972.

8.7 Organized labour

8.7.1 Union membership

At January 1, 1973 labour unions reported a total of 2.6 million members in Canada, an increase of 10.1% over 1972 (Table 8.33). Union members made up 36.3% of non-agricultural paid workers and 29.4% of the total civilian labour force in 1973. Membership, by type of union and affiliation, is presented in Table 8.34. Canadian Labour Congress (CLC) affiliates, with 1.9 million members in 1972, accounted for 71.2% of total union membership in Canada, compared with 72.8% in 1972. Of the total in CLC affiliates in 1973, 1.2 million members belonged to unions that were also affiliated with the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) in the United States; membership of unions affiliated with the CLC but not holding affiliation with the AFL-CIO totalled 613,201 or 23.4% of the total. Federations affiliated with the Quebec-based Confederation of National Trade Unions (CNTU) had 164,492 members or 6.3% of total union membership in Canada; the Canadian Council of Unions (CCU) represented 17,455 members or 0.7%; another 1.6% of the total was reported by the Centrale des syndicats démocratiques with 41,000 members; and the remaining 20.2% belonged to various unaffiliated international and national unions and independent local organizations.

International unions with headquarters in the United States accounted for 55.3% of the 1973 membership, compared with 59.6% in 1972; national and regional unions, which charter locals in Canada only, made up 42.1% (37.7% in 1972). Independent local organizations and local unions chartered by the CLC and the CNTU accounted for the remaining 2.6%.

In 1973, 21 unions reported membership of 30,000 or more. Twelve unions reported 50,000 or more members, accounting for 41.5% of the total membership. The 12 listed with their affiliation, ranked as follows in 1973 (1972 rank in parentheses):

- 1 (1) United Steelworkers of America (AFL-CIO/CLC), 173,662
- 2 (2) Canadian Union of Public Employees (CLC), 167,470
- 3 (3) Public Service Alliance of Canada (CLC), 133,503
- 4 (4) International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (CLC), 107,266
- 5 (6) Quebec Teachers' Corporation (Ind.), 87,546
- 6 (5) United Brotherhood of Carpenters and Joiners of America (AFL-CIO/CLC), 75,161
- 7 (7) International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America (Ind.), 64,126
- 8 (9) International Brotherhood of Electrical Workers (AFL-CIO/CLC), 59,700
- 9 (8) Social Affairs Federation (CNTU), 58,378
- 10 (10) International Woodworkers of America (AFL-CIO/CLC), 54,929
- 11 (not included) United Paperworkers International Union (AFL-CIO/CLC), 51,344
- 12 (not included) Canadian Food and Allied Workers, District 15 Council (AFL-CIO/CLC), 50,790.

8.7.2 Wages and collective agreements

The Canada Department of Labour publishes wage settlements data for collective agreements on a quarterly basis. The agreements covered are limited to negotiating units of 500 or more employees in all industries, except construction. The base rate for a negotiating unit is defined as the lowest rate of pay, expressed in hourly terms, for the lowest paid

classification used for qualified workers in the bargaining unit. In most cases the base rate represents pay for an unskilled or semi-skilled classification of workers. However, this is not so in contracts covering only skilled and/or professional workers. The wage data, therefore, are not necessarily representative of the average increases enjoyed by the workers in the negotiating unit as a whole. Nevertheless, the data on numbers of agreements and workers refer to all occupational groups in the negotiating unit.

Wage-rate data given in Tables 8.35 and 8.36 indicate that approximately 1.5 million workers were covered by 800 collective agreements at December 31, 1973. The average base rate rose 26.7 cents, or 8.0% during the 12-month period ended December 31, 1973, compared with an increase of 25.1 cents or 8.1% during the preceding 12-month period. On a year-over-year basis the consumer price index rose by 9.1% during the 12-month period ended December 31, 1973, and by 5.1% during the preceding 12-month period. When the wage increases are deflated by the consumer price index increase, the average base rate decreased in real terms by 1.0% in 1973 and increased by 2.9% in 1972.

Additional data are available from the Canada Department of Labour on wage settlements during quarterly periods, including number of agreements settled, number of employees covered and duration of contracts. The agreements covered are again limited to negotiating units of 500 or more employees in all industries except construction. Details are not given here but, for 1973 as a whole, 350 contracts, affecting the wage rates of about 652,675 workers, were settled. On the average the 350 settlements provided an annual percentage increase in base rate equal to 9.7% simple or 9.2% compound, over the term of the contracts. The comparable percentage for 1972 was 8.1% simple or 7.7% compound.

During 1973 settlements of one-year duration produced increases averaging 9.4%, those of two-year duration 12.0% and 8.0% for the first and second years, respectively; and those of three-year duration, 10.5%, 6.3% and 6.6% for the first, second and third years of the contract. These increases compare with those of 1972 as follows: one-year agreements, average increases of 7.9%; two-year agreements, average increases of 10.3% and 6.8%; and three-year agreements, average increases of 8.5%, 5.9% and 5.9% for the first, second and third years, respectively, of the contract.

8.8 Strikes and lockouts

Statistical information on strikes and lockouts in Canada is compiled by the Economics and Research Branch of the Canada Department of Labour on the basis of reports from Canada Manpower Centres and provincial departments of labour. Table 8.37 presents a breakdown by industry of strikes and lockouts in 1973 involving three or more workers and continuing for 10 or more man-days. The 724 work stoppages reported involved 348,470 workers and 5.8 million man-days.

The developments leading to work stoppages are often too complex to make it practicable to distinguish statistically between strikes on the one hand and lockouts on the other. However, a work stoppage that is clearly a lockout is not often encountered. The number of workers involved includes all workers reported on strike or locked out, whether or not they all belonged to the unions directly involved in the disputes leading to work stoppages. Workers indirectly affected, such as those laid off as a result of a work stoppage, are not included. Duration of strikes and lockouts in terms of man-days is calculated by multiplying the number of workers involved in each work stoppage by the number of working days the stoppage was in progress. The data on duration of work stoppages in man-days are provided to facilitate comparison of work stoppages in terms of a common denominator. They are not intended as a measure of the loss of productive time to the economy.

Sources

- 8.1.1 Public Relations Branch, Canada Department of Labour.
- 8.1.2 Information Service, Department of Manpower and Immigration.
- 8.1.3 Public Relations Branch, Canada Department of Labour.
- 8.2.1 Labour Force Survey Division, Household Statistics Branch, Statistics Canada.
- 8.2.2 Census Characteristics Division, Census Field, Statistics Canada.
- 8.3.1 - 8.3.3 Labour Division, General Statistics Branch, Statistics Canada.
- 8.3.4 Public Relations Division, Canada Department of Labour.
- 8.4 - 8.5 Labour Division, General Statistics Branch, Statistics Canada.
- 8.6 - 8.8 Public Relations Branch, Canada Department of Labour.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
-	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

8.1 Estimates of the civilian labour force and its main components, annual averages 1965-74

Year	Civilian population (14 years of age and over) '000	Civilian labour force (14 years of age and over)			Unem- ployed '000	Total labour force '000	Persons not in the labour force (14 years of age and over) '000	Un- employ- ment rate %	Partici- pation rate %
		Employed							
		Paid workers '000	Other '000	Total '000					
1965	13,128	5,760	1,102	6,862	280	7,141	5,986	3.9	54.4
1966	13,475	6,096	1,056	7,152	267	7,420	6,055	3.6	55.1
1967	13,874	6,305	1,074	7,379	315	7,694	6,179	4.1	55.5
1968	14,264	6,490	1,047	7,537	382	7,919	6,344	4.8	55.5
1969	14,638	6,720	1,060	7,780	382	8,162	6,475	4.7	55.8
1970	15,016	6,839	1,040	7,879	495	8,374	6,642	5.9	55.8
1971	15,388	7,029	1,050	8,079	552	8,631	6,757	6.4	56.1
1972	15,747	7,310	1,019	8,329	562	8,891	6,856	6.3	56.5
1973	16,125	7,757	1,002	8,759	520	9,279	6,846	5.6	57.5
1974	16,562	8,105	1,032	9,137	525	9,662	6,900	5.4	58.3

8.2 Distribution of population in the labour force and non-labour force categories, by age and sex, 1965-74

Sex, age and year	Population '000	Labour force			Not in labour force '000	Partici- pation rate %	Unemploy- ment rate %
		Employed '000	Unem- ployed '000	Total '000			
Male							
1965	6,505	4,842	224	5,065	1,440	77.9	4.4
1966	6,678	4,983	209	5,193	1,486	77.8	4.0
1967	6,876	5,083	246	5,329	1,547	77.5	4.6
1968	7,070	5,146	297	5,443	1,626	77.0	5.5
1969	7,255	5,272	288	5,560	1,695	76.6	5.2
1970	7,441	5,310	374	5,684	1,757	76.4	6.6
1971	7,622	5,392	408	5,800	1,822	76.1	7.0
1972	7,795	5,533	405	5,938	1,857	76.2	6.8
1973	7,978	5,767	360	6,127	1,851	76.8	5.9
1974	8,194	5,976	361	6,338	1,856	77.3	5.7
14-24 years							
1965	1,746	922	76	998	748	57.2	7.6
1966	1,837	980	75	1,055	782	57.4	7.1
1967	1,931	1,027	90	1,117	815	57.8	8.1
1968	2,022	1,047	113	1,160	862	57.4	9.7
1969	2,107	1,088	113	1,201	906	57.0	9.4
1970	2,187	1,098	155	1,253	935	57.3	12.4
1971	2,259	1,131	173	1,304	955	57.7	13.3
1972	2,319	1,193	179	1,372	947	59.2	13.0
1973	2,379	1,298	163	1,461	918	61.4	11.2
1974	2,448	1,386	168	1,553	895	63.4	10.8
25+ years							
1965	4,759	3,919	148	4,067	692	85.5	3.6
1966	4,841	4,003	135	4,138	704	85.5	3.3
1967	4,945	4,057	155	4,212	732	85.2	3.7
1968	5,048	4,099	184	4,283	764	84.8	4.3
1969	5,148	4,184	175	4,359	789	84.7	4.0
1970	5,254	4,212	219	4,431	822	84.3	4.9
1971	5,363	4,261	235	4,496	867	83.8	5.2
1972	5,475	4,340	226	4,566	909	83.4	4.9
1973	5,600	4,470	197	4,666	933	83.3	4.2
1974	5,746	4,591	194	4,784	962	83.3	4.1

8.2 Distribution of population in the labour force and non-labour force categories, by age and sex, 1965-74 (concluded)

Sex, age and year	Population '000	Labour force		Total '000	Not in labour force '000	Partici- pation rate %	Unemploy- ment rate %
		Employed '000	Unem- ployed '000				
Female							
1965	6,623	2,020	56	2,076	4,547	31.3	2.7
1966	6,796	2,169	58	2,227	4,570	32.8	2.6
1967	6,997	2,296	70	2,365	4,632	33.8	3.0
1968	7,194	2,391	85	2,476	4,718	34.4	3.4
1969	7,383	2,508	94	2,602	4,780	35.2	3.6
1970	7,575	2,569	121	2,690	4,885	35.5	4.5
1971	7,766	2,687	144	2,831	4,935	36.5	5.1
1972	7,952	2,796	157	2,953	4,999	37.1	5.3
1973	8,146	2,992	160	3,152	4,995	38.7	5.1
1974	8,368	3,161	163	3,324	5,043	39.7	4.9
14-24 years							
1965	1,732	643	32	675	1,057	39.0	4.7
1966	1,811	710	32	742	1,069	41.0	4.3
1967	1,895	749	40	790	1,105	41.7	5.1
1968	1,975	788	50	838	1,136	42.5	6.0
1969	2,045	826	52	878	1,167	42.9	5.9
1970	2,113	825	69	894	1,219	42.3	7.7
1971	2,174	861	83	944	1,230	43.4	8.8
1972	2,228	902	85	987	1,241	44.3	8.6
1973	2,280	970	87	1,058	1,222	46.4	8.2
1974	2,335	1,032	91	1,123	1,213	48.1	8.1
25+ years							
1965	4,891	1,377	24	1,401	3,490	28.6	1.7
1966	4,985	1,459	26	1,485	3,501	29.8	1.8
1967	5,102	1,546	30	1,576	3,527	30.9	1.9
1968	5,219	1,603	35	1,638	3,582	31.4	2.1
1969	5,338	1,682	42	1,724	3,613	32.3	2.4
1970	5,462	1,744	52	1,796	3,666	32.9	2.9
1971	5,592	1,826	62	1,887	3,705	33.7	3.3
1972	5,724	1,894	72	1,966	3,758	34.3	3.7
1973	5,867	2,021	73	2,094	3,773	35.7	3.5
1974	6,032	2,129	72	2,202	3,830	36.5	3.3

8.3 Employment and unemployment by province, 1966-74 (thousands)

Year	Province									
	Em- plov- ment	Unem- plov- ment	Em- plov- ment	Unem- plov- ment	Em- plov- ment	Unem- plov- ment	Em- plov- ment	Unem- plov- ment	Em- plov- ment	Unem- plov- ment
	Nfld.		PEI		NS		NB		Que.	
1966	127	11	34	1	235	13	190	14	2,016	100
1967	131	12	34	1	238	14	190	14	2,080	116
1968	130	14	34	1	239	15	193	15	2,082	145
1969	131	15	36	1	244	14	194	18	2,132	158
1970	133	16	34	1	246	15	196	17	2,144	183
1971	139	18	36	1	244	20	198	16	2,197	197
1972	145	20	36	1	247	20	207	19	2,225	201
1973	157	23	39	1	262	19	218	22	2,353	189
1974	155	29	41	1	278	20	227	23	2,427	190
	Ont.		Man.		Sask.		Alta.		BC	
1966	2,651	69	348	9	324	5	550	12	678	32
1967	2,745	89	348	9	326	6	564	14	723	39
1968	2,830	104	360	13	334	8	586	18	750	47
1969	2,936	95	363	10	339	11	611	17	795	42
1970	2,996	134	363	17	334	15	622	28	810	67
1971	3,079	170	371	19	335	13	633	31	847	64
1972	3,218	162	378	18	337	15	657	30	879	72
1973	3,366	142	392	16	345	13	689	29	937	65
1974	3,519	152	411	13	353	10	731	20	996	64

¹Unemployment figures for Prince Edward Island are not published due to high sampling error.

8.4 Percentage distribution of the employed, by industrial group, 1965-74

Year	Total employed '000	Agriculture %	Other primary industries %	Manu- fac- turing %	Con- struc- tion %	Trans- portation, commu- nication and other utilities %	Trade %	Finance, insurance and real estate %	Service ¹ %
1965	6,862	8.7	3.4	23.8	6.7	9.0	16.7	4.1	27.6
1966	7,152	7.6	3.1	24.4	7.0	8.7	16.5	4.2	28.5
1967	7,379	7.6	3.0	23.8	6.4	8.9	16.6	4.2	29.5
1968	7,537	7.2	2.9	23.3	6.2	8.9	16.7	4.3	30.4
1969	7,780	6.9	2.8	23.4	6.2	8.9	16.6	4.5	30.7
1970	7,879	6.5	2.8	22.7	6.0	8.8	16.8	4.6	31.9
1971	8,079	6.3	2.8	22.2	6.1	8.7	16.5	4.8	32.7
1972	8,329	5.8	2.6	22.3	6.0	8.8	16.9	4.6	33.0
1973	8,759	5.3	2.6	22.5	6.3	8.8	17.1	4.7	32.7
1974	9,137	5.2	2.6	22.2	6.5	8.6	17.2	4.9	32.8

¹Includes public administration and defence.

8.5 Employed by occupation, 1973 and 1974

Employed by occupation (1971 Census classification)	Estimates in thousands	
	1973	1974
Managerial, administrative	498	538
Natural sciences, engineering and mathematics	276	287
Social sciences	102	106
Religion	27	27
Teaching	379	395
Medicine and health	382	395
Art, literature and recreation	98	106
Clerical	1,452	1,534
Sales	948	986
Service	1,054	1,105
Farming, horticulture and animal husbandry	490	495
Fishing, hunting and trapping	26	25
Forestry and logging	65	65
Mining and quarrying	51	52
Processing	391	414
Machining	258	271
Product fabricating, assembling and repairing	857	900
Construction trades	638	660
Transport equipment operation	386	392
Materials handling	252	257
Other crafts and equipment operation	131	126
All occupations	8,759	9,137

8.6 Persons 15 years of age and over in the total labour force, by country of birth and region of residence, 1971

Country of birth	Canada ¹	Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia
Total labour force	8,813,340	715,040	2,242,840	3,410,830	1,495,330	930,030
Born in Canada	7,049,575	682,545	1,989,720	2,430,865	1,241,715	688,765
Born outside Canada	1,763,770	32,495	253,115	979,960	253,610	241,265
US	124,405	7,575	18,020	45,390	30,460	22,590
Europe	1,429,985	21,130	194,180	830,880	199,030	182,160
Western Europe	280,010	3,905	42,465	142,290	48,965	41,680
Austria and Germany	144,730	1,450	13,355	75,920	29,170	24,400
Netherlands	85,774	1,875	2,795	52,020	15,515	13,425
France	26,405	315	18,895	4,415	1,510	1,200
Other Western Europe	23,100	265	7,425	9,935	2,770	2,655

8.6 Persons 15 years of age and over in the total labour force, by country of birth and region of residence, 1971 (concluded)

Country of birth	Canada ¹	Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia
Northern Europe	513,355	14,055	33,595	298,545	72,415	93,450
United Kingdom	450,850	12,835	30,185	268,380	60,270	78,110
Republic of Ireland	20,890	525	1,665	12,840	3,060	2,725
Scandinavia ²	30,275	645	1,275	9,475	8,480	10,265
Finland	11,345	50	465	7,850	610	2,345
Southern Europe	387,270	1,685	82,870	256,540	21,270	24,595
Italy	234,360	710	53,150	156,485	10,755	13,120
Greece	50,995	530	17,315	29,145	2,015	1,965
Yugoslavia	48,805	120	3,210	35,190	5,130	5,035
Portugal	40,400	220	6,345	27,085	2,885	3,855
Other Southern Europe	12,710	100	2,850	8,640	485	620
Eastern Europe	249,350	1,485	35,250	133,510	56,380	22,430
Poland	87,835	555	12,510	46,420	22,035	6,230
USSR	78,605	355	8,305	41,605	20,850	7,440
Hungary	42,875	280	7,065	24,210	6,490	4,730
Czechoslovakia	25,345	230	3,270	14,370	4,515	2,900
Other Eastern Europe	14,690	65	4,095	6,900	2,495	1,135
Asia	97,700	2,450	14,080	43,935	13,815	23,285
Other	111,680	1,340	26,830	59,755	10,310	13,230

¹Includes Yukon Territory and Northwest Territories.

²Includes Denmark, Iceland, Norway and Sweden.

8.7 Persons 15 years of age and over in the labour force, by period of immigration, sex and age group, 1971

Sex and period of immigration	Age group							All ages
	15-19	20-24	25-34	35-44	45-54	55-64	65+	
Both sexes	884,440	1,408,365	1,992,020	1,739,085	1,539,035	986,340	264,050	8,813,345
Born in Canada	809,770	1,215,735	1,582,555	1,325,140	1,193,100	754,850	168,425	7,049,575
Born outside Canada	74,675	192,635	409,465	413,945	345,930	231,505	95,625	1,763,770
Immigrated before 1946	—	—	10,805	31,550	87,180	125,135	77,835	332,505
Immigrated 1946-50	—	16,335	32,010	33,105	65,060	31,255	5,115	182,895
Immigrated 1951-60	41,410	79,970	120,920	230,530	148,575	58,035	8,865	688,305
Immigrated 1961-71	33,265	96,330	245,730	118,760	45,110	17,065	3,810	560,070
Male	500,910	816,010	1,355,925	1,194,705	1,023,715	684,280	184,700	5,760,245
Born in Canada	460,640	707,680	1,088,695	912,485	798,445	519,130	114,330	4,601,400
Born outside Canada	40,275	108,330	267,230	282,220	225,270	165,160	70,370	1,158,845
Immigrated before 1946	—	—	6,455	19,885	54,500	88,550	58,055	227,445
Immigrated 1946-50	—	9,615	21,740	22,055	40,100	22,975	3,675	120,170
Immigrated 1951-60	22,620	46,285	82,040	161,675	102,055	42,325	6,215	463,215
Immigrated 1961-71	17,655	52,430	156,995	78,605	28,605	11,300	2,430	348,020
Female	383,530	592,355	636,095	544,380	515,320	302,060	79,350	3,053,100
Born in Canada	349,130	508,055	493,860	412,655	394,655	235,720	54,095	2,448,175
Born outside Canada	34,400	84,305	142,235	131,725	120,660	66,345	25,255	604,925
Immigrated before 1946	—	—	4,350	11,665	32,680	36,585	19,780	105,060
Immigrated 1946-50	—	6,720	10,270	11,050	24,960	8,280	1,440	62,725
Immigrated 1951-60	18,790	33,685	38,880	68,855	46,520	15,710	2,650	225,090
Immigrated 1961-71	15,610	43,900	88,735	40,155	16,505	5,765	1,380	212,050

8.8 Persons 15 years of age and over in the labour force¹, by class of worker and sex, 1961 and 1971

Class or worker	1961			1971		
	Total	Male	Female	Total	Male	Female
Wage-earners	5,366,977	3,781,520	1,585,457	7,674,525	5,005,385	2,669,140
Paid workers	..	..	..	7,543,815	4,888,690	2,655,130
Self-employed in incorporated companies	..	..	..	130,705	116,695	14,010
Self-employed in unincorporated companies	940,488	846,467	94,021	668,850	586,130	82,720
Unpaid family workers	164,385	77,531	86,854	283,550	74,205	209,350
Total	6,471,850	4,705,518	1,766,332	8,626,925	5,665,715	2,961,210

¹Includes the experienced labour force which is defined as the total labour force minus persons looking for work, who last worked prior to Jan. 1, 1970 or who never worked. For 1961, persons who never worked were excluded but persons looking for work who had not worked since Jan. 1, 1960 were included.

8.9 Persons 15 years of age and over, who worked full-time and part-time in 1970, by weeks worked, showing average employment income, 1971

Weeks worked	Worked		Worked full-time		Worked part-time	
	Total		Male	Female	Male	Female
Total	No. 9,586,280 9,272,760		6,093,085 6,023,320	3,493,190 3,249,440	7,870,030 7,675,010	2,481,950 2,328,685
Average employment income	\$ 5,392		6,574	3,199	6,125	3,864
1-13 weeks	No. 1,036,620 987,195		492,740 474,280	543,880 512,910	529,015 508,460	246,375 234,000
Average employment income	\$ 998		1,328	692	1,248	845
14-26 weeks	No. 993,325 956,780		519,485 509,350	473,835 447,435	629,050 611,010	271,400 258,735
Average employment income	\$ 2,155		2,650	1,592	2,514	1,889
27-39 weeks	No. 971,820 943,055		572,635 566,465	399,185 376,590	694,065 678,695	247,995 236,265
Average employment income	\$ 3,646		4,395	2,521	4,174	3,026
40-52 weeks	No. 3,001,765 2,887,025		1,584,860 1,550,095	1,416,900 1,336,935	1,852,130 1,798,170	765,770 728,995
Average employment income	\$ 2,246		2,883	1,508	2,783	1,922
40-48 weeks	No. 1,300,650 1,259,985		818,640 811,810	482,015 448,175	1,084,575 1,059,215	344,015 323,165
Average employment income	\$ 5,700		6,849	3,619	6,205	4,026
49-52 weeks	No. 5,283,865 5,125,755		3,689,585 3,661,420	1,594,285 1,464,330	4,933,330 4,817,630	1,372,175 1,276,525
Average employment income	\$ 7,087		8,076	4,614	7,356	4,932
40-52 weeks	No. 6,584,515 6,385,740		4,508,225 4,473,225	2,076,300 1,912,505	6,017,905 5,876,845	1,716,190 1,599,690
Average employment income	\$ 6,813		7,853	4,381	7,149	4,749
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Average employment income						
1-13 weeks						
Average employment income						

8.10 Labour force¹ 15 years of age and over, by major industrial group and sex, 1961 and 1971

Sector and industrial group ^a	1961		1971	
	Male	Female	Male	Female
Primary or extractive				
Agriculture	554,713	78,612	369,630	111,565
Forestry	106,387	2,193	71,025	3,355
Fishing and trapping	35,748	515	24,540	900
Mines, quarries and oil wells	112,254	3,963	129,675	9,360
Secondary or manufacturing				
Manufacturing	1,098,691	300,328	1,302,635	404,695
Construction	427,679	10,875	511,940	26,280
Tertiary or service				
Transportation, communication and other utilities	527,071	83,160	564,885	114,025
Trade	694,211	303,125	803,100	466,190
Finance, insurance and real estate	124,310	104,595	173,825	184,235
Community, business and personal service	518,515	750,332	865,345	1,176,045
Public administration and defence	389,360	86,620	468,420	163,320
Industry unspecified	116,579	42,014	380,700	301,240
Total	4,705,518	1,766,332	5,665,715	2,961,210

¹Includes the experienced labour force which is defined as the total labour force minus persons looking for work, who last worked prior to Jan. 1, 1970 or who never worked. For 1961, persons who never worked were excluded but persons looking for work who had not worked since Jan. 1, 1960 were included.

^aData based on 1971 Standard Industrial Classification.

8.11 Labour force 15 years of age and over, by industrial sector and province, 1961 and 1971

Province	Primary		Secondary		Tertiary	
	1961	1971	1961	1971	1961	1971
Newfoundland	21,134	15,440	21,719	33,140	65,969	86,320
Prince Edward Island	11,386	8,130	5,242	7,020	16,790	24,010
Nova Scotia	33,689	21,980	49,693	62,790	149,301	181,165
New Brunswick	28,124	19,095	39,487	51,795	106,903	135,045
Quebec	199,943	122,110	593,646	621,435	923,263	1,218,450
Ontario	228,011	180,350	796,964	1,025,115	1,316,337	1,909,780
Manitoba	67,148	55,925	76,698	79,265	200,174	249,585
Saskatchewan	125,102	109,235	32,520	37,830	160,459	198,140
Alberta	120,187	115,575	79,817	114,850	278,396	400,625
British Columbia	55,891	69,285	149,818	210,830	355,172	558,305
Canada ¹	894,385	720,050	1,837,573	2,245,550	3,581,299	4,979,390

¹Includes Yukon Territory and Northwest Territories.

8.12 Labour force¹ 15 years of age and over, by occupation group, sex and education, 1971 Census

Occupation group	Total	Less than grade 9	Grades 9 to 11	Grades 12 and 13	University		Non-university post-secondary education		Vocational training	
					Without degree	With degree	None	Post-secondary education	None	Vocational training
Male										
All occupations	5,665,715	1,745,825	1,935,760	1,103,450	434,570	446,110	4,864,235	801,480	4,645,905	1,019,810
Managerial, administrative	313,935	19,695	68,090	90,345	51,920	83,880	237,625	76,310	251,485	62,445
Natural sciences, engineering and mathematics	217,025	8,900	33,540	62,740	36,775	75,070	152,205	64,315	155,800	61,225
Social sciences	49,525	1,310	4,620	6,195	5,930	8,585	44,605	8,925	44,245	5,280
Religion	19,885	1,380	1,865	1,865	2,885	12,445	14,105	5,780	17,305	2,575
Teaching	138,170	1,650	7,440	14,510	26,895	87,665	98,070	40,100	116,670	21,500
Medicine and health	83,865	6,740	15,155	10,830	7,935	43,200	68,420	15,445	67,490	16,380
Art, literature and recreation	58,585	6,315	16,920	17,970	10,265	7,410	43,975	14,610	44,220	16,380
Clerical	433,380	63,415	163,920	132,610	53,930	19,505	362,105	71,280	371,475	61,905
Sales	567,985	99,775	221,315	159,900	60,835	26,180	484,710	83,275	478,580	89,400
Service	521,935	181,470	204,565	93,720	31,270	10,910	462,040	59,895	425,330	96,605
Farming, horticulture and animal husbandry	405,305	195,890	138,290	48,150	18,220	4,755	382,935	22,375	376,460	28,840
Fishing, hunting and trapping	26,660	18,055	6,810	1,175	480	135	25,675	980	24,805	1,855
Forestry and logging	65,850	37,365	18,805	6,170	2,775	735	61,905	3,950	59,390	6,455
Mining and quarrying	58,785	26,230	21,420	6,905	3,315	910	54,590	4,195	52,835	5,950
Processing	275,180	118,885	99,440	38,825	13,355	4,675	251,715	23,460	240,910	34,265
Product fabricating, assembling and repairing	227,260	85,495	92,025	40,480	7,815	1,445	185,300	41,960	148,680	78,580
Transportation	484,145	175,590	197,290	87,655	19,335	4,275	395,190	88,955	327,035	157,110
Construction trades	563,435	233,675	193,420	85,800	25,045	5,495	483,145	80,295	422,595	140,845
Materials handling	330,245	145,990	129,625	38,740	13,035	2,845	307,140	23,100	294,250	35,990
Other crafts and equipment operation	165,385	66,065	63,170	25,265	9,105	1,780	154,495	10,885	151,175	14,210
Occupations, n.e.c.	95,300	23,715	42,895	22,170	4,970	1,550	76,460	18,840	62,130	33,170
Occupation not reported	145,900	59,310	47,575	22,525	11,125	5,365	131,955	13,950	128,560	17,345
	417,995	149,000	148,340	88,905	17,335	14,415	389,895	28,100	384,485	33,515
Female										
All occupations	2,961,210	614,410	1,089,485	861,030	250,245	146,045	2,376,865	584,345	2,504,705	456,505
Managerial, administrative	58,310	3,325	17,740	21,190	7,605	8,445	41,035	17,270	45,890	12,420
Natural sciences, engineering and mathematics	17,110	680	2,745	5,090	3,285	5,310	13,275	4,335	13,285	3,820
Social sciences	29,530	1,165	4,470	7,070	4,860	11,960	21,415	8,115	24,415	5,115
Religion	3,705	745	1,105	790	390	675	2,635	1,075	3,020	685
Teaching	211,120	2,650	12,095	61,580	66,140	59,100	116,745	94,380	181,590	29,530
Medicine and health	242,690	19,420	72,095	101,195	32,070	17,910	111,410	131,275	150,900	91,785
Art, literature and recreation	21,895	1,460	5,885	7,275	3,905	3,370	16,230	5,660	17,250	4,645
Clerical	240,180	55,065	385,680	407,595	70,520	21,325	738,015	202,165	767,745	172,435
Sales	247,760	49,190	116,915	62,085	15,815	3,750	220,415	27,345	221,755	26,010
Service	447,985	171,555	187,295	65,295	19,865	3,975	409,605	38,380	392,050	55,935
Farming, horticulture and animal husbandry	106,845	48,845	38,010	16,750	3,635	570	99,105	7,745	100,155	6,695
Fishing, hunting and trapping	16,525	280	175	60	5	—	495	30	480	45
Forestry and logging	1,410	605	515	140	140	15	1,365	50	1,335	75
Mining and quarrying	59,380	31,765	155	435	35	5	57,085	330	56,460	55
Processing	13,675	5,840	21,445	4,720	1,400	240	7,085	2,480	12,845	3,105
Product fabricating, assembling and repairing	150,210	83,010	52,185	11,830	3,500	45	12,845	835	12,845	1,090
Construction trades	5,130	1,970	1,985	845	2,705	475	142,945	7,260	139,060	11,150
Materials handling	40,450	2,405	3,865	1,465	250	80	4,600	430	4,330	800
Other crafts and equipment operation	8,190	17,545	17,090	4,325	390	70	7,475	1,840	7,360	830
Occupations, n.e.c.	31,540	3,830	6,215	2,675	630	185	38,615	1,840	38,310	2,140
Occupation not reported	319,270	104,870	118,930	74,815	13,700	6,950	289,530	29,745	294,545	24,730

n.e.c. = not elsewhere classified.

¹Excludes persons looking for work, who last worked prior to Jan. 1, 1970 or who never worked.

8.13 Annual average index numbers¹ of employment, by industrial division, 1968-73, and monthly indexes 1973 and 1974

Year and month	For- estry	Mining (incl. milling)	Manu- factur- ing	Con- struc- tion	Trans- portation, commu- nication and other utilities	Trade	Finance, insurance and real estate	Service ²	Indus- trial com- posite
Averages									
1968	91.1	109.8	122.1	119.4	109.5	129.4	131.4	157.8	122.7
1969	88.7	107.9	125.2	119.1	111.9	136.6	138.8	171.8	126.9
1970	84.2	115.7	122.8	113.9	112.6	139.3	143.6	178.5	127.1
1971P	79.4	114.8	121.6	115.5	114.6	140.3	145.9	186.4	127.8
1972P	76.3	110.4	123.7	109.7	116.0	146.2	148.7	193.5	129.9
1973P	86.4	111.4	129.9	109.9	118.0	155.3	157.1	206.1	135.9
1973P									
January	74.9	109.1	123.6	91.6	113.7	148.8	150.3	189.5	128.5
February	73.3	110.1	124.8	91.9	114.1	148.1	151.8	192.9	129.2
March	70.0	109.9	126.2	93.4	115.0	150.2	153.3	195.9	130.7
April	64.5	106.6	127.7	100.2	116.6	152.1	153.3	199.6	132.3
May	83.7	111.2	129.7	110.7	120.3	153.5	155.6	207.4	135.9
June	97.1	114.5	132.8	118.1	123.4	154.5	157.8	214.0	139.3
July	101.0	114.8	131.5	122.0	122.4	151.3	159.4	215.1	138.6
August	101.2	114.3	132.7	124.6	106.4	152.1	159.5	217.3	136.7
September	98.9	111.2	132.8	124.8	122.1	157.3	159.5	212.1	139.9
October	97.8	111.7	133.6	123.7	121.6	161.4	160.8	211.6	140.8
November	92.2	112.0	132.4	117.1	120.9	166.1	161.8	209.7	140.3
December	82.3	110.8	130.7	100.7	119.4	167.7	162.2	208.3	138.2
1974P									
January	80.6	111.4	131.2	99.1	119.5	160.9	162.6	210.4	137.5
February	78.2	113.0	131.1	99.6	119.3	159.4	163.0	212.1	137.3
March	72.3	113.6	132.3	101.6	119.9	160.5	163.7	215.4	138.4
April	65.5	110.3	134.5	105.9	121.1	162.3	164.4	218.2	139.5
May	80.3	114.4	135.6	114.3	125.1	164.5	167.2	226.6	143.3
June	82.3	120.4	138.0	123.0	128.4	166.3	168.4	233.8	146.5
July	102.1	120.8	135.7	129.9	129.2	162.9	170.2	232.3	146.0
August	105.1	118.7	136.4	133.8	126.4	163.2	169.0	232.9	146.0
September	102.4	116.0	135.9	133.7	126.8	168.1	168.3	229.5	146.3
October	100.5	115.7	134.9	132.3	127.6	171.4	169.4	229.7	146.5
November	94.9	116.7	132.5	124.7	127.0	173.7	170.4	227.0	145.1
December	81.5	116.5	128.5	106.8	125.0	175.5	170.8	220.4	141.5

¹Indexes are calculated as at the last pay period of each month (1961 = 100).

²Consists mainly of hotels, restaurants, laundries, dry-cleaning establishments and recreational and business services.

8.14 Annual average index numbers¹ of employment, by industrial division and group, 1969-73

Industry	1969	1970	1971P	1972P	1973P
FORESTRY	88.7	84.2	79.4	76.3	86.4
MINING (incl. milling)	107.9	115.7	114.8	110.4	111.4
Metals	97.4	106.9	106.1	100.7	102.9
Gold	51.1	45.4	34.5	35.4	34.9
Copper-gold-silver	121.3	125.4	123.5	142.0	140.1
Iron	122.6	135.1	132.5	124.7	152.6
Mineral fuels	102.6	108.9	112.7	115.1	115.8
Coal	69.6	74.0	77.9	78.7	75.3
Crude petroleum and natural gas	136.4	144.0	146.8	151.1	155.7
Non-metals (except fuels)	126.3	136.3	133.6	131.5	130.2
Asbestos	110.9	118.0	120.5	117.2	114.0
MANUFACTURING	125.2	122.8	121.6	123.7	129.9
Durable goods	136.7	132.8	131.4	134.9	144.1
Non-durable goods	115.9	114.7	113.7	114.7	118.4
Foods and beverages	109.1	109.1	108.6	107.9	110.2
Slaughtering and meat processing	102.1	102.4	105.8	104.8	104.2
Dairy products	101.6	102.9	100.2	98.1	96.8
Fish products	129.7	128.8	134.3	137.9	149.8
Fruit and vegetable processing	118.4	115.8	112.5	110.4	116.1
Grain mill products	102.7	107.1	105.6	102.8	103.0
Biscuits	106.0	103.7	100.4	101.7	102.5
Bakeries	95.9	94.0	91.1	88.7	88.1
Confectionery	107.2	103.8	101.9	96.4	96.2
Soft drinks	122.5	119.6	115.3	110.3	113.0
Distilleries	117.5	115.4	113.4	117.8	119.3
Breweries	97.8	99.6	105.0	104.6	112.3

8.14 Annual average index numbers¹ of employment, by industrial division and group, 1969-73 (continued)

Industry	1969	1970	1971P	1972P	1973P
MANUFACTURING (concluded)					
Tobacco processing and products	97.8	95.4	94.6	92.8	92.1
Rubber products	123.7	112.2	111.7	118.4	125.5
Leather products	99.2	91.2	91.5	89.1	91.5
Shoes (except rubber)	94.3	86.0	87.6	81.7	82.2
Luggage, handbags and small leather goods	123.6	113.2	111.1	119.0	130.8
Textile products	119.8	113.7	114.8	122.3	127.8
Cotton yarn and cloth	86.9	78.2	76.5	75.1	73.7
Woolen yarn and cloth	89.9	88.0	83.7	87.3	94.1
Synthetic textiles	136.3	126.4	122.8	128.6	130.7
Knitting mills	117.3	112.5	112.2	116.4	118.7
Hosiery	113.1	106.0	95.6	92.5	87.2
Other knitting mills	120.2	116.7	122.2	131.0	137.7
Clothing	109.2	109.2	108.9	110.4	114.4
Men's clothing	114.5	119.3	119.7	124.1	128.1
Women's clothing	115.5	112.3	112.0	113.6	119.2
Wood products	113.0	108.1	115.9	121.3	132.7
Saw, shingle and planing mills	111.7	108.8	117.3	123.0	137.1
Furniture and fixtures	134.0	127.6	129.6	139.3	150.7
Household furniture	138.7	129.7	132.1	146.5	159.6
Paper and allied industries	121.7	121.1	119.4	119.6	121.7
Pulp and paper mills	116.3	116.3	115.4	114.9	115.5
Printing, publishing and allied industries	115.5	116.6	113.4	111.9	115.8
Commercial printing	117.8	118.9	116.1	114.4	121.4
Printing and publishing	110.8	111.3	108.4	106.3	104.6
Primary metal industries	123.2	130.5	128.9	127.5	132.4
Iron and steel mills	126.1	137.6	137.0	139.0	145.2
Iron foundries	153.2	143.5	130.0	136.0	144.6
Smelting and refining	107.3	119.7	118.9	109.0	112.8
Metal fabricating industries	135.7	133.9	130.9	133.3	141.8
Fabricated structural metals	117.1	122.8	112.4	98.3	103.5
Ornamental and architectural metals	125.3	122.4	121.4	123.2	142.5
Metal stamping, pressing and coating	144.6	138.2	138.5	147.7	151.8
Wire and wire products	138.6	136.0	133.7	136.7	147.9
Hardware, tools and cutlery	160.8	163.0	156.8	167.5	183.5
Heating equipment	106.6	103.0	96.7	98.6	101.5
Miscellaneous metal fabricating	130.1	127.8	127.9	134.1	145.2
Machinery (except electrical)	151.4	149.5	143.6	146.2	161.0
Agricultural implements	119.2	95.5	86.6	105.8	133.9
Miscellaneous machinery and equipment	152.5	153.2	146.0	148.5	167.6
Office and store machinery	191.2	207.9	210.8	190.7	158.1
Transportation equipment	155.6	141.7	144.3	152.5	163.7
Aircraft and parts	117.3	104.8	80.5	77.9	82.0
Motor vehicles	183.9	166.6	186.8	197.2	220.1
Assembling	181.6	160.9	175.9	180.0	194.2
Parts and accessories	180.5	162.7	184.7	194.2	218.1
Shipbuilding and repair	107.6	92.5	93.3	113.0	106.6
Electrical products	150.4	144.3	134.1	135.8	142.6
Major appliances (incl. non-electrical)	125.5	106.5	103.1	113.3	120.6
Household radios and televisions	130.4	124.9	121.4	144.6	157.3
Communications equipment	180.0	171.7	155.8	143.3	155.1
Non-metallic mineral products	119.3	115.3	113.6	117.9	126.3
Concrete products	124.4	123.7	135.9	133.9	144.1
Clay products	111.3	105.8	100.3	93.1	99.9
Glass and glass products	129.2	127.1	118.8	125.9	137.2
Petroleum and coal products	104.0	105.9	105.6	105.9	105.7
Petroleum refineries	92.2	93.8	91.9	89.8	90.2
Chemicals and chemical products	120.4	120.5	116.3	114.3	117.8
Pharmaceuticals and medicines	137.9	143.3	148.6	154.2	164.2
Paints and varnishes	109.6	108.9	108.3	105.6	110.5
Soap and cleaning compounds	102.3	98.8	96.0	94.8	97.9
Industrial chemicals	117.9	119.8	112.5	105.8	104.5
Miscellaneous manufacturing industries	149.4	151.8	151.9	157.7	170.6
CONSTRUCTION	119.1	113.9	115.5	109.7	109.9
Building	130.3	124.9	125.2	115.4	117.1
General contractors	110.7	103.6	104.1	93.2	94.4
Special trade contractors	151.1	147.6	147.7	138.7	140.9
Engineering	99.8	95.0	98.8	99.0	97.7
Highways, bridges and streets	84.0	81.0	82.0	81.1	81.3
Other engineering	120.1	113.0	120.3	121.5	118.0
TRANSPORTATION, COMMUNICATION AND OTHER UTILITIES	111.9	112.6	114.4	116.0	118.0
Transportation	107.3	106.9	107.4	108.5	108.1
Air transport and services	145.2	161.2	158.2	166.8	180.7
Water transport and services	101.2	100.7	99.4	95.3	95.3
Railway transport	86.3	84.2	83.9	84.1	72.6
Truck transport	138.7	135.0	137.1	134.6	141.1
Bus transport, interurban and rural	123.2	129.1	135.7	141.8	147.0
Urban transit	113.8	114.3	114.1	116.4	124.2
Highway and bridge maintenance	116.6	113.0	116.0	121.1	116.0
Storage	110.1	110.3	110.1	111.6	112.4
Grain elevators	102.5	102.4	103.5	102.9	99.3
Other storage and warehousing	131.4	131.9	127.8	135.0	148.4

8.14 Annual average index numbers¹ of employment, by industrial division and group, 1969-73 (concluded)

Industry	1969	1970	1971P	1972P	1973P
TRANSPORTATION, COMMUNICATION AND OTHER UTILITIES (concluded)					
Communication	121.3	125.7	130.4	134.6	141.0
Radio and television broadcasting	132.7	133.5	136.4	138.8	143.6
Telephone	119.0	123.0	125.7	129.2	135.6
Telegraph and cable	81.5	80.5	78.7	77.8	72.6
Post office	132.8	141.3	153.1	160.7	171.5
ELECTRIC POWER, GAS AND WATER					
Electric power	119.0	120.4	124.4	122.5	128.9
Gas distribution	121.6	124.6	128.9	125.5	132.7
	107.6	103.7	102.9	109.3	113.5
TRADE					
Wholesale	136.6	139.3	140.3	146.2	155.3
Retail	129.0	132.8	132.8	135.1	143.8
Food stores	140.7	142.8	144.3	152.2	161.5
Department stores	148.4	151.6	144.1	151.7	157.1
Variety stores	136.9	135.6	139.9	149.2	157.9
Automotive product stores	132.5	132.6	132.2	138.4	146.6
	148.3	149.2	155.7	159.6	172.5
FINANCE, INSURANCE AND REAL ESTATE					
Financial institutions	138.8	143.6	145.9	148.7	157.1
Insurance and real estate	143.5	148.2	148.5	155.9	168.7
Insurance carriers	132.4	137.5	141.5	139.0	141.2
	124.7	126.6	126.8	121.3	116.6
SERVICE					
Recreational services	171.8	178.5	186.4	193.5	206.1
Business services	158.4	161.3	167.9	174.8	186.2
Personal services	189.5	194.8	207.8	220.5	234.9
Miscellaneous services	157.2	162.3	167.9	172.8	182.5
Industrial composite	206.7	223.5	233.3	239.2	256.5
	126.9	127.1	127.8	129.9	135.9

¹Indexes refer to the last week of each month (1961 = 100).8.15 Annual average index numbers¹ of employment, by province, 1969-73, and monthly indexes 1973 and 1974

Year and month	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Canada
Averages											
1969	120.7	130.6	117.8	119.1	119.9	131.0	118.0	118.1	136.7	137.5	126.9
1970	121.8	134.0	114.3	119.2	119.3	131.6	117.7	113.2	138.2	139.3	127.1
1971P	125.9	139.4	113.7	122.8	118.7	132.1	117.2	114.4	139.6	144.5	127.8
1972P	126.5	140.6	116.7	122.7	120.1	134.2	117.6	116.8	143.6	148.4	129.9
1973P	131.3	144.4	123.0	126.8	124.6	141.2	119.9	120.3	150.8	157.4	135.9
1973P											
January	118.2	123.8	112.2	115.1	118.4	134.2	115.1	112.5	143.2	146.4	128.5
February	119.4	118.7	113.0	114.1	119.1	135.1	115.2	113.5	143.2	147.9	129.2
March	117.5	124.3	115.5	116.4	120.1	136.1	116.2	113.8	145.7	152.0	130.7
April	120.0	128.5	116.1	118.3	121.4	138.1	118.1	115.9	146.5	154.0	132.3
May	129.3	145.3	119.9	128.5	124.1	141.4	121.2	120.9	151.5	157.5	135.9
June	139.7	156.0	124.4	135.3	127.8	144.2	122.7	125.2	154.9	161.0	139.3
July	142.5	166.0	126.7	135.9	126.4	142.8	122.4	125.0	156.3	161.9	138.6
August	137.1	151.8	125.8	129.4	125.7	141.9	114.6	118.9	152.1	159.2	136.7
September	141.4	162.9	128.6	134.4	128.5	144.8	123.7	124.7	154.3	161.4	139.9
October	141.6	158.7	127.7	135.3	129.0	145.9	124.6	125.1	154.9	163.2	140.8
November	138.0	155.9	127.2	132.7	128.6	145.7	124.2	125.4	154.3	163.3	140.3
December	130.4	141.1	125.7	125.7	126.5	144.1	122.4	122.4	152.8	161.1	138.2
1974P											
January	131.5	132.5	123.0	123.9	125.3	143.4	121.7	120.8	152.7	160.9	137.5
February	126.4	133.4	124.6	124.1	125.0	142.8	121.6	121.2	154.6	162.2	137.3
March	125.8	135.5	125.5	124.3	125.5	143.6	122.7	122.6	156.5	166.2	138.4
April	127.8	140.5	126.7	123.6	126.3	145.0	124.7	123.4	157.4	167.4	139.5
May	136.5	155.2	131.4	132.6	130.4	148.1	129.3	129.0	162.2	168.7	143.3
June	149.9	170.2	134.6	142.9	133.9	151.5	131.5	134.1	167.0	165.2	146.5
July	151.7	175.8	134.9	145.2	131.7	149.6	131.8	136.4	169.6	172.1	146.0
August	147.0	172.2	135.8	144.9	132.9	148.9	132.4	135.9	169.4	172.9	146.0
September	149.8	162.6	133.6	141.8	133.3	150.2	131.7	135.1	167.8	171.2	146.3
October	146.4	158.1	132.4	139.7	133.9	151.0	131.5	134.8	168.5	169.1	146.5
November	144.7	149.5	132.0	137.7	132.2	149.5	132.0	134.8	166.9	167.4	145.1
December	137.4	139.0	127.7	129.8	127.9	146.4	129.7	135.5	164.3	163.1	141.5

¹Indexes refer to the last week of each month (1961 = 100).

8.16 Annual average index numbers¹ of employment, by metropolitan area, 1969-73, and monthly indexes 1973 and 1974

Year and month	Montreal	Quebec	Toronto	Ottawa-Hull	Hamilton	Windsor	Winnipeg	Vancouver
Averages								
1969	122.7	118.1	134.3	137.7	121.2	152.7	121.2	140.0
1970	121.4	123.3	135.1	140.6	124.0	149.9	121.2	141.1
1971P	120.2	129.8	135.5	143.1	123.6	150.0	120.1	144.9
1972P	120.9	132.1	139.0	146.8	123.9	153.4	120.2	149.8
1973P	126.0	134.4	147.2	156.9	129.8	160.4	123.0	157.6
1973P								
January	121.3	128.0	140.0	147.1	124.2	153.3	118.0	147.4
February	121.5	128.9	141.2	149.1	124.5	153.9	118.9	149.0
March	123.0	129.9	142.4	150.6	125.4	153.7	119.7	152.7
April	123.9	132.5	144.2	153.3	127.4	156.8	121.7	154.2
May	126.0	129.6	147.4	157.9	130.7	160.1	124.0	156.4
June	128.2	134.6	150.3	162.4	131.4	165.8	124.6	159.1
July	125.3	135.2	147.7	161.2	131.5	163.0	123.9	159.1
August	126.5	138.4	147.2	158.8	131.0	165.0	121.6	161.1
September	128.8	139.6	149.9	158.9	132.5	167.5	126.3	161.3
October	129.5	139.6	152.3	161.3	132.9	167.0	127.2	163.7
November	129.6	139.4	152.7	159.7	134.5	154.6	125.7	164.7
December	128.1	136.6	150.8	162.1	132.4	163.6	124.6	162.9
1974P								
January	128.4	134.2	150.6	161.2	131.3	161.9	124.0	163.1
February	127.2	134.3	150.1	161.7	131.9	158.6	123.5	164.1
March	128.2	133.0	151.9	161.0	131.4	154.0	124.6	168.2
April	129.3	133.7	152.8	163.0	132.5	156.2	126.6	169.2
May	132.1	137.8	154.9	168.2	137.0	159.2	131.0	166.9
June	133.8	139.5	158.1	172.5	140.6	162.8	132.8	167.1
July	130.3	138.6	155.3	171.1	139.4	158.2	131.8	171.2
August	131.3	141.6	152.8	173.8	139.6	162.2	132.3	172.5
September	132.8	141.4	156.5	174.1	138.5	164.8	132.3	172.8
October	134.1	140.5	158.9	173.6	139.5	163.2	133.5	172.5
November	133.3	139.4	157.4	172.6	139.3	159.7	135.0	172.7
December	129.6	135.2	154.2	169.5	137.0	156.4	132.0	168.8

¹Indexes refer to the last week of each month (1961 = 100).

8.17 Annual index numbers of employment and average weekly earnings, by industry, province and urban area, 1971-73

Industry, province and urban area	Employment (1961 = 100)			Average weekly wages and salaries (dollars)		
	1971P	1972P	1973P	1971P	1972P	1973P
INDUSTRY						
Forestry	79.4	76.3	86.4	155.53	172.92	197.04
Mining (incl. milling)	114.8	110.4	111.4	177.00	190.29	211.42
Manufacturing	121.6	123.7	129.9	143.99	156.10	167.48
Durable goods ¹	131.4	134.9	144.1	155.33	168.09	180.41
Non-durable goods ¹	113.7	114.7	118.4	133.28	144.64	154.71
Construction	115.5	109.7	109.9	188.26	209.90	225.45
Transportation, communication and other utilities	114.6	116.0	118.0	154.14	167.94	181.89
Trade	140.3	146.2	155.3	108.45	117.58	126.49
Finance, insurance and real estate	145.9	148.7	157.1	129.59	140.79	154.54
Service	186.4	193.5	206.1	98.57	107.32	114.53
Industrial composite	127.8	129.9	135.9	137.64	149.22	160.46
PROVINCE						
Newfoundland	125.9	126.5	131.3	123.79	134.60	149.09
Prince Edward Island	139.4	140.6	144.4	89.97	101.02	111.17
Nova Scotia	113.7	116.7	123.0	112.82	123.20	134.44
New Brunswick	122.8	122.7	126.8	113.36	125.08	133.97
Quebec	118.7	120.1	124.6	132.04	142.86	154.30
Ontario	132.1	134.2	141.2	143.04	154.92	165.61
Manitoba	117.2	117.6	119.9	123.84	135.59	144.76
Saskatchewan	114.4	116.8	120.3	121.71	133.18	142.28
Alberta	139.6	143.6	150.8	138.78	149.94	161.12
British Columbia	144.5	148.4	157.4	152.50	165.08	178.22

8.17 Annual index numbers of employment and average weekly earnings, by industry, province and urban area, 1971-73 (concluded)

Industry, province and urban area	Employment (1961 = 100)			Average weekly wages and salaries (dollars)		
	1971P	1972P	1973P	1971P	1972P	1973P
URBAN AREA						
Corner Brook, Nfld.	100.3	95.5	101.9	130.70	139.38	158.84
St. John's, Nfld.	141.3	156.7	166.2	109.67	122.62	138.63
Halifax, NS	120.5	124.7	133.3	115.95	126.61	135.78
Sydney, NS	90.6	89.8	97.6	119.83	125.05	145.05
Moncton, NB	142.6	141.6	148.5	108.66	118.01	126.19
Saint John, NB	119.1	118.5	119.3	119.72	130.33	140.83
Chicoutimi, Que.	113.5	111.6	111.0	150.59	165.24	177.40
Drummondville, Que.	121.1	127.4	135.0	110.44	119.44	124.59
Granby, Qué.	109.4	115.1	120.8	109.04	115.58	124.52
Montreal, Que.	120.2	120.9	126.0	135.58	146.62	157.11
Ottawa, Ont.—Hull, Que.	143.1	146.8	156.9	130.21	142.46	151.23
Quebec, Que.	129.8	132.1	134.4	122.15	132.09	142.39
Rouyn—Noranda, Que.	100.1	98.0	98.6	130.34	149.06	154.44
Saint-Hyacinthe, Que.	124.3	126.6	132.6	105.34	112.18	118.69
Saint-Jean, Que.	128.8	140.9	150.6	115.74	125.52	132.18
Saint-Jérôme, Que.	121.3	126.4	151.8	116.27	127.40	133.21
Shawinigan, Que.	86.3	82.3	87.7	135.01	149.52	159.50
Sherbrooke, Que.	111.6	111.4	116.9	116.53	127.11	132.43
Sorel, Que.	154.6	165.8	172.7	151.03	165.10	175.36
Thetford Mines, Que.	123.0	122.9	126.0	139.21	146.22	158.90
Trois-Rivières, Que.	110.9	113.7	115.9	127.45	137.60	148.10
Valleyfield, Que.	127.6	128.4	137.0	136.15	145.47	157.97
Barrie, Ont.	..	..	181.5	..	..	148.22
Belleville, Ont.	128.9	132.0	134.4	121.41	130.03	139.12
Brampton, Ont.	291.6	301.3	332.1	140.63	157.12	170.50
Brantford, Ont.	124.8	128.7	143.7	128.74	141.90	154.54
Brockville, Ont.	129.3	125.2	134.4	133.68	147.06	152.45
Chatham, Ont.	143.2	155.2	178.5	141.90	163.36	177.37
Cornwall, Ont.	125.3	129.4	135.5	128.05	138.55	150.02
Guelph, Ont.	136.6	133.1	145.8	131.12	141.71	148.87
Hamilton, Ont.	123.6	123.9	129.8	147.65	159.90	170.85
Kingston, Ont.	122.5	124.2	130.0	132.28	143.00	152.94
Kitchener, Ont.	155.6	163.3	173.2 ^a	127.46	137.27	146.84 ^a
London, Ont.	123.8	128.3	132.4	132.56	144.42	154.86
Midland, Ont.	..	..	217.5	..	..	128.82
Niagara Falls, Ont.	115.3	115.1	120.8	130.09	139.11	150.75
North Bay, Ont.	119.8	119.1	122.2	137.72	152.43	159.98
Orillia, Ont.	..	..	151.9	..	..	127.72
Oshawa, Ont.	131.2	133.1	148.7	164.65	179.68	195.67
Owen Sound, Ont.	..	..	160.5	..	..	137.16
Pembroke, Ont.	..	..	108.6	..	..	121.66
Peterborough, Ont.	136.5	135.2	135.5	144.23	156.06	168.11
Port Hope, Ont.	..	..	176.9	..	..	159.47
St. Catharines, Ont.	137.6	136.5	146.1	157.23	167.84	180.83
St. Thomas, Ont.	200.7	215.2	226.7	146.49	146.32	181.41
Sarnia, Ont.	127.7	131.0	135.3	170.81	168.92	203.08
Sault Ste Marie, Ont.	123.6	123.0	126.9	160.85	172.58	185.24
Stratford, Ont.	153.0	168.7	184.6	121.02	127.99	136.49
Sudbury, Ont.	136.5	116.7	108.0	165.78	175.81	187.05
Thunder Bay, Ont.	135.5	137.5	137.9	141.58	149.81	158.70
Timmins, Ont.	77.2	76.3	80.3	133.24	142.97	158.01
Toronto, Ont.	135.5	139.0	147.2	144.88	156.51	166.81
Welland, Ont.	113.0	105.5	107.1	161.75	175.62	186.75
Windsor, Ont.	150.0	153.4	160.4	163.30	183.33	201.17
Woodstock, Ont.	149.7	154.2	166.4	129.07	141.57	153.46
Brandon, Man.	..	..	133.5	..	..	119.16
Winnipeg, Man.	120.1	120.2	123.0	116.89	128.50	136.89
Moose Jaw, Sask.	..	..	79.5	..	..	119.89
Prince Albert, Sask.	..	..	137.9	..	..	147.07
Regina, Sask.	123.7	123.2	131.3	117.42	129.49	139.30
Saskatoon, Sask.	129.5	131.4	139.7	113.92	123.91	132.65
Calgary, Alta.	149.7	155.4	163.0	137.36	148.12	159.47
Edmonton, Alta.	144.6	150.7	160.7	130.42	142.44	153.08
Lethbridge, Alta.	..	..	155.9	..	..	131.75
Medicine Hat, Alta.	..	..	112.8	..	..	140.69
Red Deer, Alta.	..	..	203.1	..	..	133.19
Kamloops, BC	..	..	294.8	..	..	162.11
Prince George, BC	..	..	279.2	..	..	181.82
Vancouver, BC	144.9	149.8	157.6	148.86	161.10	174.47
Victoria, BC	128.8	132.5	144.5	128.39	136.84	148.75

^aDurable goods manufacturing includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products and non-metallic mineral products; non-durable goods manufacturing includes all other manufacturing industries.

^bKitchener, Cambridge and Waterloo.

8.18 Annual average weekly earnings, by industrial division, 1969-73, and monthly averages 1973 and 1974 (dollars)

Year and month	For- estry	Mining (incl. milling)	Manu- factur- ing	Con- struc- tion	Trans- portation, communi- cation and other utilities	Trade	Finance, insur- ance and real estate	Service ¹	Indus- trial com- posite
Averages									
1969	133.60	148.93	122.97	150.68	131.03	93.81	113.83	84.23	117.64
1970	137.60	164.70	132.75	167.15	142.35	100.50	120.52	90.65	126.82
1971P	155.53	177.00	143.99	188.26	154.14	108.45	129.59	98.57	137.64
1972P	172.92	190.29	156.10	209.90	167.94	117.58	140.79	107.32	149.22
1973P	197.04	211.42	167.48	225.45	181.89	126.49	154.54	114.53	160.46
1973P									
January	192.13	205.55	163.44	220.18	174.83	121.66	149.61	113.24	155.64
February	200.55	206.36	164.41	224.44	176.01	122.42	150.95	112.55	156.70
March	201.88	206.85	165.32	225.79	176.42	123.07	152.19	112.66	157.34
April	196.84	208.37	165.09	217.81	179.40	125.09	152.09	113.83	157.89
May	192.27	208.66	166.02	218.10	180.58	126.06	153.13	114.32	159.09
June	195.29	209.55	168.01	223.77	181.58	128.36	152.99	114.48	161.08
July	191.40	207.46	164.63	228.12	176.73	129.46	152.59	115.74	159.59
August	195.67	210.67	165.23	232.11	185.81	128.80	153.27	114.80	160.97
September	202.63	214.78	171.00	238.85	185.45	127.87	156.03	113.79	164.08
October	208.19	217.79	173.44	237.77	186.62	128.36	159.18	115.86	165.65
November	201.04	221.61	173.46	233.28	188.40	127.73	160.12	116.48	165.19
December	186.64	219.41	169.72	205.15	190.90	128.95	161.15	116.57	162.24
1974P									
January	204.70	225.36	175.77	233.27	195.10	129.79	164.19	119.18	167.72
February	217.94	226.44	176.38	236.42	196.16	131.58	166.79	118.80	169.06
March	222.42	229.45	178.72	239.22	197.76	133.34	169.73	119.59	171.07
April	217.80	229.79	179.96	240.62	199.40	135.64	171.49	121.51	172.56
May	217.67	233.96	181.67	247.39	203.84	138.18	172.10	123.55	175.41
June	201.20	233.54	182.55	249.53	200.95	141.72	172.11	125.97	176.40
July	218.39	234.63	184.94	254.81	205.66	144.52	174.04	129.13	180.07
August	223.95	240.44	187.60	258.06	206.74	143.97	174.09	129.92	181.73
September	229.86	245.54	192.61	268.64	208.62	143.22	172.90	129.38	184.34
October	240.59	252.72	196.84	270.92	211.22	144.29	174.21	131.25	187.10
November	240.26	258.24	197.76	266.43	212.14	146.02	175.94	132.52	187.65
December	200.85	257.52	192.61	238.28	214.58	146.72	179.46	132.49	183.88

¹Mainly hotels, restaurants, laundries, dry-cleaning establishments and recreational and business services.

8.19 Annual average weekly hours and hourly earnings of hourly rated wage-earners in specified industries, 1968-73, and monthly averages 1973 and 1974

Year and month	All manufactures		Mining (incl. milling)		Construction	
	Average weekly hours	Average hourly earnings \$	Average weekly hours	Average hourly earnings \$	Average weekly hours	Average hourly earnings \$
Averages						
1968	40.3	2.58	41.8	3.07	40.5	3.33
1969	40.0	2.79	41.4	3.28	39.8	3.71
1970	39.7	3.01	41.0	3.71	39.2	4.21
1971P	39.7	3.28	40.4	4.04	39.2	4.75
1972P	40.0	3.54	40.3	4.34	40.1	5.15
1973P	39.6	3.85	40.9	4.82	39.5	5.66
1973P						
January	40.0	3.71	41.2	4.64	39.3	5.52
February	40.2	3.72	41.2	4.67	39.9	5.60
March	40.2	3.76	40.9	4.71	40.0	5.61
April	39.6	3.79	40.6	4.77	38.0	5.65
May	39.8	3.82	40.8	4.78	38.5	5.59
June	39.9	3.85	40.9	4.78	39.8	5.59
July	38.7	3.85	40.3	4.77	40.9	5.58
August	39.2	3.83	40.6	4.84	41.2	5.65
September	40.0	3.93	40.8	4.91	41.7	5.78
October	40.0	3.98	41.0	4.95	41.0	5.84
November	40.0	3.97	41.5	5.01	39.3	5.95
December	38.0	4.04	40.5	5.03	33.8	5.86
1974P						
January	39.5	4.08	41.3	5.09	38.3	6.09
February	39.4	4.09	41.1	5.14	38.5	6.15
March	39.5	4.15	40.7	5.26	38.8	6.19
April	39.2	4.21	40.2	5.28	38.3	6.29
May	39.0	4.27	40.5	5.39	39.1	6.35
June	39.0	4.30	39.9	5.45	40.3	6.21
July	38.4	4.39	39.4	5.52	40.6	6.32
August	38.7	4.44	39.8	5.60	40.3	6.45
September	39.1	4.54	40.2	5.65	40.9	6.65
October	39.2	4.64	40.8	5.79	40.5	6.77
November	39.0	4.66	41.2	5.88	38.9	6.90
December	36.8	4.71	39.8	5.98	34.4	67.5

8.20 Average weekly hours and hourly earnings of hourly rated wage-earners in specified industries and selected urban areas, 1971-73

Industry, province and urban area	Average weekly hours			Average hourly earnings(\$)		
	1971P	1972P	1973P	1971P	1972P	1973P
INDUSTRY						
Mining (incl. milling)	40.4	40.3	40.9	4.04	4.34	4.82
Metal mining	39.3	39.0	39.6	4.17	4.48	4.94
Coal mining	41.1	40.4	40.7	3.51	3.92	4.45
Manufacturing	39.7	40.0	39.6	3.28	3.54	3.85
Durable goods ¹	40.1	40.5	40.3	3.55	3.82	4.17
Non-durable goods ¹	39.2	39.4	39.0	3.02	3.25	3.52
Construction	39.2	40.1	39.5	4.75	5.15	5.66
Building	37.4	38.3	37.9	4.90	5.34	5.88
Engineering	43.1	43.9	42.7	4.44	4.83	5.32
Other						
Urban transit	41.9	42.1	41.9	4.02	4.28	4.61
Highway and bridge maintenance	36.7	35.8	41.2	2.94	3.13	3.62
Hotels, restaurants and taverns	31.5	31.5	29.9	1.95	2.08	2.30
Laundries, cleaners and pressers	36.8	36.6	36.0	1.91	2.03	2.26
PROVINCE						
Manufacturing						
Newfoundland	40.0	39.9	41.1	2.72	2.98	3.29
Nova Scotia	39.2	39.5	39.1	2.67	2.98	3.30
New Brunswick	40.1	40.1	39.3	2.71	2.92	3.23
Quebec	40.3	40.6	40.1	2.89	3.09	3.35
Ontario	39.8	40.2	40.0	3.47	3.74	4.06
Manitoba	38.5	38.7	38.5	2.92	3.15	3.45
Saskatchewan	39.2	38.7	38.6	3.45	3.62	3.94
Alberta	39.2	38.9	38.5	3.47	3.74	4.11
British Columbia	37.2	37.6	37.3	4.12	4.49	4.91
SELECTED URBAN AREA						
Manufacturing						
Montreal	39.9	40.1	39.6	2.93	3.14	3.40
Toronto	40.1	40.6	40.1	3.30	3.56	3.84
Hamilton	39.2	39.7	39.4	3.80	4.14	4.50
Windsor	40.8	42.2	42.6	4.30	4.71	5.18
Winnipeg	38.3	38.5	38.5	2.89	3.11	3.40
Vancouver	37.2	37.4	37.0	4.00	4.36	4.80

¹Durable goods manufacturing includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products and non-metallic mineral products; non-durable goods manufacturing includes all other manufacturing industries.

8.21 Wages and salaries, by industry and supplementary labour income, 1969-74, and by month 1973 and 1974¹ (million dollars)

Year and month	Industry						
	Agriculture	Forestry	Mining	Manufacturing	Construction	Transportation, communication and other utilities	Trade
Annual							
1969	344	492	975	11,088	3,243	4,493	5,550
1970	368	491	1,155	11,589	3,436	4,881	6,054
1971P	388	525	1,239	12,283	4,110	5,338	6,556
1972P	407	563	1,287	13,583	4,582	5,870	7,415
1973P	487	716	1,430	15,336	5,146	6,670	8,449
1974P	600	812	1,682	17,503	5,925	7,883	9,965
1973P							
January	24.5	50.7	114.1	1,184.6	341.9	504.1	649.8
February	24.6	51.7	115.2	1,203.9	347.6	511.4	651.3
March	27.7	50.1	116.8	1,225.2	362.3	518.6	664.0
April	32.7	45.0	111.9	1,234.1	397.0	557.5	681.3
May	39.6	56.4	117.3	1,260.5	439.0	564.0	693.5
June	47.6	66.4	120.9	1,303.5	463.5	573.3	710.7
July	56.2	67.7	121.1	1,274.6	472.3	570.3	700.7
August	63.4	68.7	121.2	1,288.4	492.7	541.4	701.4
September	56.4	69.9	120.3	1,323.8	502.5	576.0	720.6
October	45.8	71.3	122.1	1,349.3	493.8	581.0	742.1
November	37.0	64.7	124.7	1,351.9	461.0	583.4	760.9
December	31.2	53.4	124.2	1,336.5	372.5	588.5	772.4
1974P							
January	28.5	56.7	126.9	1,351.8	389.5	595.7	747.8
February	29.2	59.0	129.1	1,352.0	396.9	597.9	751.1
March	33.5	56.2	132.5	1,382.1	409.4	642.5	766.4
April	40.2	50.6	128.8	1,403.6	427.6	617.6	789.0
May	49.4	61.5	135.5	1,441.3	472.0	654.6	813.8
June	60.1	64.5	142.1	1,478.5	499.4	660.4	844.0
July	71.0	69.2	145.2	1,468.7	551.4	676.4	842.3
August	79.6	82.3	144.7	1,499.4	575.3	669.6	840.5
September	70.0	82.5	143.8	1,541.2	597.8	671.2	862.3
October	56.1	84.2	148.4	1,547.0	598.3	683.1	885.7
November	44.7	79.5	152.5	1,535.9	554.6	682.5	899.5
December	37.1	65.9	152.6	1,501.5	453.2	731.4	922.5

8.21 Wages and salaries, by industry and supplementary labour income, 1969-74, and by month 1973 and 1974¹ (million dollars) (concluded)

Year and month	Industry					
	Finance, insurance and real estate	Service	Public administra- tion and defence ²	Total wages and salaries ³	Supple- mentary labour income	Total labour income
Annual						
1969	2,207	9,221	3,106	40,765	2,300	43,065
1970	2,384	10,389	3,407	44,203	2,503	46,706
1971P	2,526	11,640	3,891	48,544	2,847	51,391
1972P	2,895	12,891	4,341	53,893	3,384	57,277
1973P	3,475	14,227	4,884	60,896	4,065	64,961
1974P	4,102	16,639	5,792	70,968	5,001	75,970
1973P						
January	264.6	1,144.4	374.6	4,655.2	342.6	4,997.8
February	271.1	1,198.3	378.9	4,755.8	345.1	5,100.9
March	277.6	1,169.4	393.8	4,809.7	347.4	5,157.0
April	281.0	1,173.5	387.0	4,905.1	346.9	5,252.0
May	286.0	1,186.9	404.9	5,054.2	350.2	5,404.4
June	290.1	1,202.2	420.2	5,207.5	357.5	5,565.0
July	290.7	1,090.3	418.4	5,074.7	337.6	5,412.3
August	292.1	1,076.5	429.0	5,086.9	329.4	5,416.4
September	297.2	1,224.9	412.3	5,312.4	335.1	5,647.5
October	305.2	1,243.4	419.4	5,381.2	330.1	5,711.3
November	308.5	1,260.2	418.0	5,373.5	326.5	5,699.9
December	310.6	1,256.9	427.5	5,279.8	316.8	5,596.6
1974P						
January	317.0	1,264.2	423.7	5,303.9	411.7	5,715.6
February	323.3	1,283.8	435.4	5,359.5	413.0	5,772.6
March	330.8	1,308.0	446.7	5,511.8	422.9	5,934.7
April	335.8	1,328.7	441.4	5,566.4	418.0	5,984.4
May	343.0	1,356.7	480.1	5,813.3	428.6	6,241.9
June	345.4	1,390.8	489.2	5,982.3	436.2	6,418.5
July	352.5	1,265.5	514.9	5,967.7	419.6	6,387.3
August	349.5	1,336.4	498.8	6,087.1	414.8	6,501.9
September	344.7	1,535.3	507.8	6,363.4	421.2	6,784.6
October	348.6	1,466.2	501.6	6,323.4	409.0	6,732.5
November	353.1	1,486.0	512.0	6,303.0	403.7	6,706.7
December	358.2	1,617.3	540.5	6,386.3	402.3	6,788.6

¹Table based on the 1960 Standard Industrial Classification. Figures not adjusted for seasonality.

²Excludes military pay and allowances.

³Includes fishing and trapping.

8.22 Percentage composition of the total pay package, all employees

All employees	Manufacturing		Mining	
	1968	1971	1969	1972
Basic pay for regular work	100.00	100.00	100.00	100.00
Additional pay for time worked	7.31	6.49	12.36 ¹	10.33 ¹
Paid absence	9.54	10.58	9.98	11.17
Miscellaneous payments to employees	1.58	1.56	2.31	2.35
Employer payments to welfare and benefit plans	9.73	9.97	10.22	10.81
Total labour cost	128.14	128.60	134.87	134.66

¹Includes underground production bonus.

8.23 Percentage composition of the total pay package, salaried employees and wage-earners

Item	Manufacturing		Mining	
	1968	1971	1969	1972
SALARIED EMPLOYEES				
Basic pay for regular work	100.00	100.00	100.00	100.00
Additional pay for time worked	2.52	1.98	1.99	1.51
Paid absence	9.70	10.62	10.33	11.22
Miscellaneous payments to employees	2.49	2.28	1.99	2.69
Employer payments to welfare and benefit plans	8.88	9.02	9.79	10.73
Total labour cost	123.56	123.90	124.10	126.15
WAGE-EARNERS				
Basic pay for regular work	100.00	100.00	100.00	100.00
Additional pay for time worked	9.99	9.02	19.13 ¹	16.23 ¹
Paid absence	9.46	10.55	9.79	11.14
Miscellaneous payments to employees	1.08	1.15	2.51	2.13
Employer payments to welfare and benefit plans	10.22	10.49	10.52	10.84
Total labour cost	130.75	131.21	141.95	140.34

¹Includes underground production bonus.

8.24 Paid absence as percentage of basic pay for regular work

Type of absence	Manufacturing		Mining	
	1968	1971	1969	1972
ALL EMPLOYEES				
Paid holidays	3.54	4.00	3.18	3.76
Vacation pay	5.50	6.03	6.34	6.87
Paid sick leave	0.44	0.47	0.40	0.47
Personal leave and other paid absence	0.06	0.09	0.06	0.07
Total paid absence	9.54	10.58	9.98	11.17
SALARIED EMPLOYEES				
Paid holidays	3.60	4.02	3.52	3.86
Vacation pay	5.43	5.76	5.88	6.37
Paid sick leave	0.60	0.72	0.83	0.89
Personal leave and other paid absence	0.07	0.12	0.10	0.09
Total paid absence	9.70	10.62	10.33	11.22
WAGE-EARNERS				
Paid holidays	3.52	3.99	2.97	3.70
Vacation pay	5.55	6.17	6.64	7.20
Paid sick leave	0.35	0.32	0.12	0.18
Personal leave and other paid absence	0.04	0.07	0.05	0.05
Total paid absence	9.46	10.55	9.79	11.14

8.25 Employer payments to employee welfare and benefit plans as percentages of basic pay for regular work

Plan	Manufacturing		Mining	
	1968	1971	1969	1972
ALL EMPLOYEES				
Workmen's compensation	1.10	1.15	3.08	2.66
Unemployment insurance	0.90	0.88	0.88	0.94
Canada/Quebec Pension Plan	1.41	1.27	1.41	1.16
Private pension plans	3.24	3.18	2.48	3.45
Life and health insurance plans	2.91 ¹	3.04 ¹	2.03 ¹	2.03 ¹
Other plans	0.17	0.45	0.34	0.57
Total employer expenditure	9.73	9.97	10.22	10.81
SALARIED EMPLOYEES				
Workmen's compensation	0.79	0.82	1.69	1.53
Unemployment insurance	0.48	0.47	0.40	0.59
Canada/Quebec Pension Plan	1.15	1.02	1.06	0.90
Private pension plans	3.79	3.84	4.01	5.17
Life and health insurance plans	2.40 ¹	2.52 ¹	1.96 ¹	1.57 ¹
Other plans	0.20	0.34	0.67	0.97
Total employer expenditure	8.88	9.02	9.79	10.73
WAGE-EARNERS				
Workmen's compensation	1.30	1.34	3.99	3.41
Unemployment insurance	1.12	1.12	1.17	1.17
Canada/Quebec Pension Plan	1.53	1.41	1.64	1.33
Private pension plans	2.92	2.80	1.53	2.29
Life and health insurance plans	3.20 ¹	3.32 ¹	2.06 ¹	2.33 ¹
Other plans	0.15	0.51	0.12	0.31
Total employer expenditure	10.22	10.49	10.52	10.84

¹Includes provincial medicare plans and private plans.²Includes private plans and Quebec Health Insurance Board. Other provincial medicare plans are deemed to be taxable benefits and are included under "Miscellaneous payments to employees" (see Tables 8.22 and 8.23).

8.26 Index numbers of average wage rates for certain main industrial groups, 1968-72 (1961 = 100)

Year	Logging	Mining	Manufacturing			Con- struc- tion	Trans- porta- tion, commu- nication and other utilities	Trade	Service	Local govern- ment	General index
			Durable goods	Non- durable goods	All manu- fac- turing						
1968	162.5	138.9	139.7	141.4	140.6	154.0	143.4	144.5	141.8	146.7	143.8
1969	179.8	146.2	149.7	152.5	151.2	167.0	154.9	155.2	154.0	163.4	155.1
1970	192.8	159.4	162.3	163.2	162.9	195.5	166.2	166.1	166.4	183.3	167.8
1971	212.3	169.9	175.7	176.9	176.3	223.7	183.8	178.9	178.0	200.2	182.3
1972	226.1	190.1	190.1	191.5	190.8	239.9	196.6	195.7	191.7	217.2	197.4

8.27 Average wage and salary rates for selected occupations in certain cities across Canada, Oct. 1, 1973

Industry and occupation	Halifax, NS	Saint John, NB	Sherbrooke, Que.	Montreal, Que.	Toronto, Ont.	Hamilton, Ont.	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Calgary, Alta.	Edmonton, Alta.	Vancouver, BC
	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr
CONSTRUCTION (building and structures only)												
Bricklayer and mason	6.00	5.70	5.95	5.75	7.15-7.27	7.84	6.00	6.10	6.10	..	..	6.82
Bulldozer operator	5.15	4.00-4.15	5.58	5.58	7.80	7.90	4.65	5.70	5.70	..	..	6.64
Carpenter	5.31	5.35	5.74	5.80	7.55	7.60	5.85	5.51	5.51	..	..	7.00
Cement finisher	4.70	5.22	5.55	6.02	6.67	6.65	5.05	5.30	5.30	..	..	6.55
Crane operator	5.35	4.50	5.78	5.91	8.40	8.40	5.60	6.00	6.00	..	..	6.97
Electrician	5.98	6.30	5.79	6.24	8.39	8.81	6.50	6.46	6.72	..	..	7.78
Labourer	4.55	4.15	4.89	4.89	5.80	5.95	4.60	4.48	4.48	..	..	5.54
Marble and tile setter	4.75	5.22	5.74	6.02	6.77-6.15	6.55	5.60	4.95	4.95	..	..	6.76
Painter (brush)	4.75	4.80	5.62	5.68	7.00	6.90	5.35	4.40	4.48	..	..	6.70
Plasterer	5.13	5.70	5.95	6.13	6.50	7.68	5.65	6.05	6.05	..	..	7.21
Plumber	5.26	5.75	5.79	6.24	7.89	8.32	6.65	6.46	6.46	..	..	7.49
Sheet metal worker	5.26	6.00	5.79	6.01	7.65	8.23	5.85	6.44	5.93	..	..	7.18
MANUFACTURING AND OTHER INDUSTRIES¹												
General labourer, male	3.08	3.05	3.14	3.34	3.78	3.72	3.38	3.28	3.17	3.57	3.62	4.03
Maintenance trades												
Carpenter	4.32	3.80	3.98	4.38	4.50	4.80	4.38	4.18	4.31	4.89	4.63	5.51
Electrician	4.67	4.55	4.31	4.67	5.04	5.44	4.81	5.20	4.50	5.32	5.41	5.81
Machinist	4.37	4.31	3.99	4.55	4.83	5.28	4.62	4.80	4.50	4.80	5.32	5.38
Mechanic												
Millwright	4.49	4.52	3.95	4.51	4.99	5.24	4.46	5.07	4.43	5.10	4.82	5.80
Pipefitter	5.16	4.26	4.37	4.84	4.92	5.21	4.69	4.96	..	4.70	4.97	5.62
Tool and die maker												
Welder	4.40	4.19	4.11	4.38	4.97	5.10	4.55	4.81	4.43	5.09	4.62	5.57
Service occupations												
Truck driver, light and heavy	3.12	3.19	3.25	3.86	4.09	4.13	3.54	3.43	3.62	3.96	4.02	4.73
Trucker, power	3.02	3.43	3.23	4.08	3.95	4.32	3.47	4.06	3.66	3.84	4.03	5.24
OFFICE OCCUPATIONS, MALE												
Bookkeeper, senior	152	138	164	170	182	172	163	171	165	179	177	189
Clerk, intermediate	126	131	129	132	138	151	128	129	131	144	134	145
Clerk, senior	152	156	169	167	174	191	160	159	159	184	164	179
Clerk, order	118	120	135	144	152	170	118	125	135	139	144	163
Draughtsman, intermediate	167	172	161	173	184	180	169	164	166	155	171	151
Draughtsman, senior	203	222	198	215	226	215	208	201	199	173	200	193
OFFICE OCCUPATIONS, FEMALE												
Clerk, intermediate	112	109	109	118	123	118	111	113	115	116	115	129
Machine operator												
Bookkeeping	93	90	95	100	115	108	98	101	102	105	104	117
Calculating	90	86	97	103	113	107	101	103	112	103	106	121
Secretary, senior	128	120	120	140	145	143	130	131	129	142	135	148
Stenographer, junior	107	97	99	107	116	112	104	100	102	108	103	115
Stenographer, senior	115	111	117	125	130	131	119	112	117	122	121	130
Switchboard operator and receptionist	91	90	97	104	110	108	94	95	100	101	100	113
Typist, junior	85	79	90	92	100	102	90	87	88	95	91	102
Typist, senior	102	90	101	107	116	112	104	100	95	111	107	114

¹Other industries² consists of logging; mining; transportation (all sectors including air transport), storage and communication (including radio and TV); public utilities; trade; finance; and government and personal service.

8.28 Summary of selected working conditions of non-office and office employees in manufacturing and all industries, 1973 and 1974

Item		1973		1974	
		Manu- facturing industries	All industries	Manu- facturing industries	All industries
Coverage					
NON-OFFICE EMPLOYEES					
Reporting establishments	No.	7,911	26,677	7,019	23,814
Employees	"	904,680	2,345,919	860,626	2,203,775
OFFICE EMPLOYEES					
Reporting establishments	No.	7,890	21,261	6,985	18,902
Employees	"	279,785	1,147,573	276,937	1,143,080
Percentage of non-office employees					
STANDARD WEEKLY HOURS					
40 and under		84	85	87	87
Over 40 and under 44		5	3	5	3
44		1	2	1	1
45		5	4	4	2
Over 45 and under 48		3	3	2	2
48		..	..	..	..
Over 48		..	..	..	..
Employees on a five-day week		95	90	96	91
VACATIONS WITH PAY					
Two weeks		98	83	97	82
After: 1 year or less		82	75	92	80
2 years		14	7	4	2
3 years		1	1	..	..
4-5 years		..	..	..	..
Other periods		..	..	..	..
Three weeks		88	86	90	87
After: Less than 10 years		73	78	79	81
10 years		12	7	9	5
11-14 years		..	..	..	..
15 years		2	1	1	1
Over 15 years		1	1	1	1
Four weeks		73	79	78	81
After: Less than 25 years		71	78	79	80
25 years		2	1	1	1
More than 25 years and/or other provisions		..	..	..	..
Five weeks		44	41	51	47
After: 24 years or less		20	15	26	24
25 years		20	15	22	18
30 years		2	9	2	4
Other provisions		3	4	1	1
Six weeks		7	6	16	11
After: 24 years or less		..	2	1	3
25 years		1	2	1	2
30 years		4	2	7	3
31 years or more		1	1	1	1
Other provisions		2	1	7	3
Paid statutory holidays		98	98	99	99
6 or less		3	2	2	3
7		3	3	2	3
8		12	11	8	7
9		31	22	23	15
More than 9		50	61	63	72
Percentage of office employees					
STANDARD WEEKLY HOURS					
Under 37½		31	37	32	40
37½		41	45	43	44
Over 37½ and under 40		4	2	4	2
40		22	14	20	13
Over 40		1	2	1	1
Employees on a five-day week		98	98	99	99
VACATIONS WITH PAY					
Two weeks		98	77	97	75
After: 1 year or less		93	75	95	74
2 years		4	2	1	1
3 years		..	..	..	..
5 years		..	..	..	..
Other periods		..	..	..	..
Three weeks		94	95	96	97
After: Less than 10 years		81	88	87	93
10 years		11	6	8	4
11-14 years		..	..	..	..
15 years		1	..	1	..
Over 15 years		1	..	..	..
Four weeks		84	88	88	90
After: Less than 25 years		82	86	87	89
25 years		1	1	..	..
More than 25 years and/or other provisions		..	..	..	..

8.28 Summary of selected working conditions of non-office and office employees in manufacturing and all industries, 1973 and 1974 (concluded)

Item	1973		1974	
	Manu- facturing industries	All industries	Manu- facturing industries	All industries
Percentage of office employees				
Five weeks	53	51	61	55
After: 24 years or less	22	12	31	18
25 years	24	16	26	22
30 years	3	17	2	14
Other provisions	3	6	1	1
Six weeks	9	4	14	8
After: 24 years or less	..	1	1	1
25 years	1	1	2	2
30 years	4	1	7	3
31 years or more	2	1	2	1
Other provisions	2	..	3	1
Paid statutory holidays	99	99	99	100
1-6	1	1	1	..
7	2	1	1	1
8	10	6	7	5
9	28	21	20	14
More than 9	60	70	70	80

8.29 Trusteed pension funds, income, expenditures and assets, 1971-73

Item	1971	1972 [†]	1973
TRUST ARRANGEMENTS			
	No.	No.	No.
(a) Corporate trustees	2,966	2,857	2,952
(b) Individual trustees	888	813	789
(c) Combinations of (a) and (b)	64	80	90
(d) Pension fund societies	28	28	28
Total trusted funds	3,946	3,778	3,859
INCOME			
	\$'000,000	\$'000,000	\$'000,000
Total contributions	1,260	1,469	1,763
Employer	798	944	1,168
Employee	462	525	595
Investment income	631	736	883
Net profit on sale of securities	34	117	114
Other	21	18	20
Total income	1,946	2,340	2,780
EXPENDITURES			
Pension payments out of funds	482	557	640
Cost of pension purchased	21	17	50
Cash withdrawals	115	160	202
Administration costs	15	18	20
Net loss on sale of securities	60	38	39
Other expenditures	57	13	6
Total expenditures	750	803	957
ASSETS (book value)			
Investment in pooled funds	894	978	1,063
Investment in mutual funds	51	55	49
Investment in segregated funds of insurance companies	..	..	146
Bonds	6,386	6,982	7,704
Bonds of or guaranteed by Government of Canada	424	393	356
Bonds of or guaranteed by provincial governments	3,324	3,707	4,132
Bonds of Canadian municipal governments, school boards, etc.	749	736	761
Other Canadian	1,878	2,132	2,432
Non-Canadian	11	14	23
Stocks	3,214	3,901	4,421
Canadian, common	2,531	3,200	3,717
Canadian, preferred	79	92	93
Non-Canadian, common	596	603	599
Non-Canadian, preferred	8	6	12
Mortgages	1,170	1,296	1,551
Insured residential (NHA)	641	760	898
Conventional	529	536	653
Real estate and lease-backs	47	46	51
Miscellaneous			
Cash on hand and in chartered banks	136	163	161
Guaranteed investment certificates	96	95	164
Short-term investments	247	261	554
Accrued interest and dividends receivable	104	125	143
Accounts receivable	113	145	162
Other assets	3	3	2
Total assets	12,461	14,050	16,171

8.30 Unemployment insurance statistics, 1970-74, and by month 1973 and 1974

Year, month and end of period	Activity	Claims data ('000)				Benefits data	
		Insured population ¹ '000	Claimants for UIC benefits (end of period) ^{1,2}	Initial and renewal claims received		Number of weeks '000	Average weekly payment \$
1970		5,426	540	2,261		19,817	35.08
1971		5,439	604	2,371		22,634	39.44
1972		7,845	804	2,470		30,462	61.79
1973		8,264	828	2,238		29,537	68.45
1974		8,617	828	2,410		28,461	74.89
1973							
January		7,926	1,056	270		3,634	67.68
February		7,999	1,055	155		3,268	68.49
March		8,031	1,003	158		3,148	68.67
April		8,081	921	150		2,954	68.56
May		8,239	810	157		2,664	67.70
June		8,492	739	154		2,033	67.38
July		8,584	733	179		2,138	68.33
August		8,596	691	161		2,015	67.37
September		8,203	676	161		1,812	68.03
October		8,330	677	191		1,953	69.76
November		8,343	744	247		1,916	68.99
December		8,343	835	256		2,002	71.19
1974							
January		8,324	981	278		3,368	73.80
February		8,337	1,009	170		2,951	75.00
March		8,340	984	159		2,952	75.27
April		8,411	960	156		2,810	75.24
May		8,579	825	172		2,736	74.34
June		8,745	748	157		2,024	73.57
July		9,007	719	188		2,197	73.11
August		9,055	694	151		1,881	73.21
September		8,575	664	171		1,715	74.11
October		8,638	679	224		1,914	75.59
November		8,672	760	253		1,818	77.14
December		8,716	910	332		2,094	78.90
Benefits data (concluded)							
Benefits paid (\$'000)							
	Regular	Sickness	Maternity	Retirement	Fishing	Total ³	
1970	--	--	--	--	--	695,222	
1971	--	--	--	--	--	890,594	
1972	1,764,031	58,854	36,431	2,440	20,403	1,871,802	
1973	1,850,930	80,179	66,750	3,691	20,297	2,004,212	
1974	1,924,543	98,321	81,708	4,164	22,675	2,119,213	
1973							
January	227,883	6,521	5,289	378	5,875	244,437	
February	206,339	6,769	5,049	264	5,366	222,661	
March	198,759	7,474	5,294	273	4,381	214,337	
April	187,774	6,572	5,177	272	2,716	201,120	
May	166,577	6,849	5,588	307	1,030	178,793	
June	124,993	6,331	5,279	274	82	135,588	
July	133,328	6,493	5,907	356	41	145,079	
August	123,141	6,479	5,740	336	33	134,579	
September	110,962	6,458	5,513	338	22	122,083	
October	122,360	6,974	6,503	338	29	135,223	
November	118,345	7,188	6,319	319	32	128,674	
December	130,467	6,071	5,092	235	689	141,637	
1974							
January	226,850	8,481	6,752	396	6,076	247,603	
February	201,737	7,697	5,794	326	5,800	220,512	
March	202,286	8,588	6,108	295	4,908	221,427	
April	194,319	7,727	5,580	291	3,508	210,937	
May	185,568	8,645	7,484	336	1,377	202,017	
June	134,498	7,688	6,322	310	104	147,630	
July	144,084	8,717	7,399	390	52	159,430	
August	122,304	8,227	6,741	365	80	136,533	
September	112,133	7,743	6,756	372	61	125,893	
October	126,424	9,067	8,751	431	48	143,613	
November	124,364	8,115	7,331	368	37	139,169	
December	149,976	7,624	6,692	285	625	164,449	

¹Annual figures are annual averages.
²Persons who have applied for or are in receipt of unemployment insurance benefits at end of month.
³Figures are adjusted for cancellation of warrants and collection of overpayments; prior to July 1971, total includes ordinary, seasonal and fishing benefits.

8.31 Fatal employment injuries¹, by industry, 1971-73

Industry	Number			Percentage of total		
	1971	1972	1973	1971	1972	1973
Agriculture	21	30	25	1.9	2.5	2.0
Forestry	93	76	94	8.3	6.2	7.7
Fishing and trapping	11	10	15	1.0	0.8	1.2
Mining, quarrying and oil wells	162	171	166	14.5	14.1	13.5
Manufacturing	181	247	234	16.2	20.3	19.1
Construction	225	208	201	20.2	17.1	16.4
Transportation, communication and other utilities	203	225	241	18.2	18.5	19.6
Trade	79	70	78	7.1	5.8	6.4
Finance, insurance and real estate	4	6	6	0.3	0.5	0.5
Service	70	109	78	6.3	9.0	6.4
Public administration	67	63	89	6.0	5.2	7.2
Total	1,116	1,215	1,227	100.0	100.0	100.0

¹The Canada Department of Labour compiles statistics of all fatal industrial accidents; Workmen's Compensation Board statistics (Table 8.32) include only those accidents covered by legislation.

8.32 Compensation claims for employment injuries and payments made, 1972 and 1973

Year and province	Compensation claims					Workmen's Compensation Board payments ² \$
	Medical aid only ¹	Temporary disability	Permanent disability	Fatal injury	Total	
1972						
Newfoundland	7,200	6,414	182	50	13,846	3,345,019
Prince Edward Island	1,006	1,150	6	1	2,163	830,087
Nova Scotia	12,622	11,681	661	32	24,996	12,809,706
New Brunswick	14,963	8,634	365	49	24,011	7,331,339
Quebec ³	106,033	74,635	7,478	227	188,373	83,194,001
Ontario ⁴	237,247	133,901	5,063	371	376,582	156,902,395
Manitoba	14,289	16,085	433	37	30,844	11,211,758
Saskatchewan	14,788	11,704	402	49	26,943	10,409,332
Alberta	37,742	26,416	1,362	104	65,624	27,669,929
British Columbia	55,636	39,291	1,411	179	96,517	45,326,075
Total, 1972	501,526	329,911	17,363	1,099	849,899	359,029,641
1973P						
Newfoundland	7,132	6,523	225	32	13,912	3,917,338
Prince Edward Island	1,190	1,275	7	2	2,474	1,071,305
Nova Scotia	15,411	12,511	82	19	28,023	13,231,592
New Brunswick	16,016	9,171	384	36	25,607	8,298,800
Quebec ³	129,484	114,010	11,309	337	255,140	107,205,053
Ontario ⁴	263,616	149,028	5,419	375	418,438	176,066,378
Manitoba	14,533	16,995	462	46	32,036	11,910,386
Saskatchewan	13,352	11,208	278	31	24,869	12,984,066
Alberta	42,952	27,983	1,492	122	72,549	32,100,000
British Columbia	57,029	49,192	1,340	180	107,741	53,222,411
Total, 1973P	560,715	397,896	20,998	1,180	980,789	420,007,329

¹Injuries requiring medical treatment but not causing disability for a sufficient period to qualify for compensation; the period varies among provinces.

²Includes, except where noted otherwise, payments to compensate loss of earnings, medical aid payments, cost of rehabilitation and hospitalization (not including capital expenditures) and pensions paid (not pensions awarded) for temporary and permanent disabilities; the Quebec compensation figure includes pensions awarded as well as pensions paid.

³Distribution partly estimated.

8.33 Union membership in Canada, 1953-73 (thousands)

Year	Members	Year	Members	Year	Members
1953	1,220	1960	1,459	1967	1,921
1954	1,268	1961	1,447	1968	2,010
1955	1,268	1962	1,423	1969	2,075
1956	1,352	1963	1,449	1970	2,173
1957	1,386	1964	1,493	1971	2,211
1958	1,454	1965	1,589	1972	2,371
1959	1,459	1966	1,736	1973	2,610

8.34 Union membership, by type of union and affiliation, as at January 1973

Type and affiliation	Unions No.	Locals No.	Membership	
			No.	%
International unions	96	4,787	1,443,246	55.3
AFL-CIO/CLC	79	4,445	1,230,735	47.2
CLC only	5	195	139,481	5.3
AFL-CIO only	5	8	619	¹
Unaffiliated unions	7	139	72,411	2.8
National unions	93	5,177	1,098,763	42.1
CLC	24	2,073	473,720	18.1
CNTU	9	977	163,928	6.3
CSD	8	233	41,000	1.6
CCU	10	43	17,455	0.7
Unaffiliated unions	42	1,851	402,660	15.4
Directly chartered local unions	133	133	16,056	0.6
CLC	130	130	15,492	0.6
CNTU	3	3	564	¹
Independent local organizations	158	158	51,571	2.0
Total	480	10,255	2,609,636	100.0

¹Less than 0.1%.

8.35 Employees covered by all collective agreements¹ for negotiating units covering 500 or more employees in all industries other than construction, as at Dec. 31, 1972 and 1973

Region or province	Manufacturing industries			Non-manufacturing industries except construction	All industries except construction
	Durable goods	Non-durable goods	Total manufacturing		
1972P					
Atlantic	6,350	6,750	13,100	62,280	75,380
Newfoundland	—	3,400	3,400	7,750	11,150
Prince Edward Island	—	—	—	1,600	1,600
Nova Scotia	5,750	1,700	7,450	25,280	32,730
New Brunswick	600	1,650	2,250	27,650	29,900
Quebec	43,460	71,920	115,380	314,055	429,435
Ontario	116,645	55,515	172,160	181,775	353,935
Prairies	3,095	3,100	6,195	136,050	142,245
Manitoba	2,045	1,700	3,745	36,415	40,160
Saskatchewan	—	—	—	33,540	33,540
Alberta	1,050	1,400	2,450	66,095	68,545
British Columbia	49,135	16,740	65,875	86,090	151,965
Other ²	36,540	35,435	71,975	364,710	436,685
Canada	255,225	189,460	444,685	1,144,960	1,589,645
1973P					
Atlantic	7,270	9,010	16,280	83,375	99,655
Newfoundland	—	3,100	3,100	21,390	24,490
Prince Edward Island	—	—	—	3,900	3,900
Nova Scotia	6,670	4,360	11,030	30,125	41,155
New Brunswick	600	1,550	2,150	27,960	30,110
Quebec	41,305	69,345	110,650	316,770	427,420
Ontario	122,190	55,175	177,365	185,315	362,680
Prairies	3,600	3,000	6,600	154,310	160,910
Manitoba	2,025	1,700	3,725	39,650	43,375
Saskatchewan	550	—	550	38,490	39,040
Alberta	1,025	1,300	2,325	76,170	78,495
British Columbia	49,745	13,905	63,650	87,530	151,180
Other ²	34,100	19,065	53,165	283,665	336,830
Canada	258,210	169,500	427,710	1,110,965	1,538,675

¹All agreements in force, irrespective of the year of settlement. There were 752 agreements covering 1.6 million employees as at Dec. 31, 1972 and 800 covering 1.5 million as at Dec. 31, 1973.

²Agreements pertaining to workers located in more than one province and in the Yukon Territory and Northwest Territories.

8.36 Year-over-year percentage and cents-per-hour increases in base rates under major collective agreement, by month, 1972 and 1973

Month	Collective agreement ¹					
	Manufacturing		Non-durable goods		Total manufacturing	
	Durable goods					
	%	¢	%	¢	%	¢
1972P						
January	7.6	23.5	8.1	22.0	7.9	22.9
February	7.5	23.0	7.3	20.0	7.5	22.0
March	7.2	22.6	7.2	19.7	7.3	21.5
April	7.3	22.8	7.3	20.1	7.4	21.7

8.36 Year-over-year percentage and cents-per-hour increases in base rates under major collective agreement, by month, 1972 and 1973 (concluded)

Month	Collective agreement ¹					
	Manufacturing		Non-durable goods		Total manufacturing	
	Durable goods					
	%	¢	%	¢	%	¢
1972P (concluded)						
May	7.3	22.8	6.4	18.1	6.9	20.7
June	6.1	19.5	6.7	19.0	6.4	19.2
July	6.2	20.0	6.1	17.6	6.2	18.8
August	6.9	22.2	7.3	21.0	7.0	21.3
September	6.9	22.2	7.6	21.8	7.1	21.6
October	6.7	21.8	7.9	22.7	7.1	21.8
November	6.6	21.8	8.2	23.7	7.2	22.2
December	6.4	21.2	8.2	23.8	7.1	22.0
1973P						
January	7.5	25.0	8.3	24.1	7.8	24.6
February	7.5	24.9	8.4	24.5	7.8	24.6
March	7.2	24.1	8.4	24.4	7.7	24.2
April	7.2	24.2	8.3	24.4	7.6	24.2
May	7.7	26.1	7.8	23.1	7.8	24.8
June	9.0	30.5	7.5	22.5	8.5	27.2
July	7.8	27.1	8.0	24.1	7.9	25.8
August	7.4	25.7	6.8	20.7	7.2	23.6
September	8.1	28.5	6.9	21.3	7.7	25.6
October	8.1	28.7	7.5	23.0	7.9	26.4
November	7.1	25.3	7.8	24.2	7.4	24.9
December	8.5	30.3	8.0	24.9	8.4	28.2
	Commercial industries except construction		Non-commercial industries ²		All industries except construction	
	%	¢	%	¢	%	¢
1972P						
January	8.6	24.2	7.2	19.0	8.1	22.5
February	8.4	23.8	6.5	17.2	7.7	21.5
March	8.5	24.2	6.7	17.7	7.7	21.8
April	8.2	23.6	6.7	18.0	7.6	21.5
May	7.0	20.3	6.7	18.0	6.8	19.5
June	6.2	18.4	6.1	16.5	6.1	17.7
July	6.3	18.7	5.8	15.8	6.0	17.6
August	6.6	19.8	5.8	15.7	6.2	18.2
September	7.0	20.9	5.8	15.8	6.5	19.0
October	7.1	21.3	7.4	20.5	7.2	21.3
November	7.3	22.0	7.1	19.7	7.2	21.3
December	7.2	21.8	8.6	24.0	7.7	23.0
1973P						
January	7.1	22.2	9.4	29.1	8.1	25.2
February	7.2	22.5	9.3	28.7	8.0	25.1
March	7.5	23.4	9.3	28.9	8.2	25.6
April	7.7	24.2	9.0	28.1	8.1	25.7
May	8.0	25.2	9.0	28.2	8.3	26.2
June	8.6	27.4	8.3	26.3	8.4	26.6
July	8.4	26.9	10.4	32.8	9.1	29.3
August	8.2	26.6	10.6	33.5	9.1	29.4
September	8.1	26.6	10.1	32.4	8.9	28.9
October	8.5	27.8	8.3	27.2	8.3	27.2
November	8.4	27.7	8.0	26.3	8.1	26.7
December	9.3	30.9	6.7	22.4	8.0	26.7

¹Based on all major collective agreements covering 500 or more employees in force except those in the construction industry. Data refer to rates actually paid in the month specified; no adjustments have been made for retroactive wage increases.

²This category consists of public administration and defence; education and related institutions; hospitals; welfare organizations; religious organizations; private households; miscellaneous services; highway and bridge maintenance; water system and other utilities.

8.37 Strikes and lockouts, by industry, 1973 with totals for 1969-73

Industry	Strikes and lockouts beginning during year	Strikes and lockouts in existence during year		
		Strikes and lockouts	Workers involved	Duration in man-days
Agriculture	—	—	—	—
Forestry	23	23	6,181	17,490
Fishing and trapping	3	3	8,000	55,950
Mines	32	33	11,560	220,570
Metal	21	22	8,342	159,230
Mineral fuels	1	1	300	300
Non-metal	9	9	2,518	49,440
Quarries	—	—	—	—
Incidental services	1	1	400	11,600

8.37 Strikes and lockouts, by industry, 1973 with totals for 1969-73 (concluded)

Industry	Strikes and lockouts beginning during year	Strikes and lockouts in existence during year		
		Strikes and lockouts	Workers involved	Duration in man-days
Manufacturing	365	384	148,857	3,376,000
Food and beverages	56	61	12,340	368,230
Tobacco products	—	—	—	—
Rubber	8	8	1,643	116,960
Leather	—	—	—	—
Textiles	8	9	2,418	93,850
Knitting mills	1	1	14	130
Clothing	1	1	44	310
Wood	24	27	13,909	159,500
Furniture and fixtures	9	9	844	35,030
Paper	35	36	22,161	732,310
Printing and publishing	12	13	1,408	17,790
Primary metals	27	27	16,964	176,240
Metal fabricating	40	43	5,663	138,510
Machinery	19	19	2,146	80,640
Transportation equipment	37	37	41,945	676,700
Electrical products	31	34	17,652	573,640
Non-metallic mineral products	24	26	4,537	106,360
Petroleum and coal products	2	2	347	10,730
Chemical products	22	22	3,106	75,510
Miscellaneous	9	9	1,716	13,560
Construction	53	62	26,104	519,300
Transportation and utilities	68	74	91,424	1,086,870
Transportation	40	45	76,069	950,170
Storage	1	1	52	210
Communication	20	21	14,005	100,870
Power, gas and water	7	7	1,298	35,620
Trade	63	71	12,657	166,430
Finance	2	2	17	260
Financial institutions	—	—	—	—
Insurance and real estate	2	2	17	260
Service	45	49	39,338	234,190
Education	17	17	33,809	92,660
Health and welfare	11	12	3,248	65,830
Religious organizations	—	—	—	—
Recreational services	—	—	—	—
Services to business	6	6	1,176	49,550
Personal services	2	2	165	980
Accommodation and food services	4	5	418	8,500
Miscellaneous services	5	7	522	16,670
Public administration	23	23	4,332	99,020
Federal administration	—	—	—	—
Provincial administration	3	3	550	3,860
Local administration	20	20	3,782	95,160
Other government offices	—	—	—	—
Total	1973 677	724	348,470	5,776,080
	1972 556	598	706,474	7,753,530
	1971 547	569	239,631	2,866,590
	1970 503	542	261,706	6,539,560
	1969 566	595	306,799	7,751,880

Sources

8.1 - 8.5 Labour Force Survey Division, Household Statistics Branch, Statistics Canada.

8.6 - 8.12 Census Characteristics Division, Census Field, Statistics Canada.

8.13 - 8.25 Labour Division, General Statistics Branch, Statistics Canada.

8.26 - 8.28 Public Relations Branch, Canada Department of Labour.

8.29 - 8.30 Labour Division, General Statistics Branch, Statistics Canada.

8.31 - 8.37 Public Relations Branch, Canada Department of Labour.

Chapter 9

Scientific research

9.1 Federal science policy

The responsibility for federal policy on science resides in the Cabinet. To exercise this authority a Cabinet committee known as the Committee of the Privy Council on Scientific and Industrial Research was established in the National Research Council Act. The Committee is chaired by the Minister designated in the National Research Council Act as responsible for that Council. The members were Ministers of other departments with significant science programs. The National Research Council for many years had the responsibility for advising the Committee on science policy, complemented after 1949 by a panel of senior officials from the science-based departments and agencies.

In 1964, as a result of recommendations by the Royal Commission on Government Organization, a Science Secretariat was created in the Privy Council Office. This Secretariat worked with the Cabinet Secretariat as part of the internal government structure to provide the most accurate and comprehensive background to Ministers when decisions on science policy were made. Its responsibilities included the monitoring of new program submissions, the initiation and formulation of new policies and programs and the co-ordination of government participation in national and international science and technology activities. Later, in 1967, the Science Secretariat was granted responsibility for nominating Counsellors (Scientific) for certain embassies and missions abroad, in consultation with the Department of External Affairs.

In 1966 the federal government established the Science Council of Canada, a Crown corporation charged with independently assessing Canada's scientific and technological resources, requirements and potential and making recommendations thereon by publication of reports. The Science Council is concerned both with research and development and with the application of science and technology to Canada's social and economic problems. It draws its membership from industry, the universities and government, and its views are independent of those of the internal government structure.

The Council has published several reports based on commissioned studies from consultants on different areas of science, and has also published its own reports. Some of the topics include upper atmosphere and space, the proposal for an intensive neutron generator, water resources research, university research and the federal government, scientific and technical information dissemination, earth and marine science, research in fisheries, wildlife, forestry resources and agriculture, a Canadian STOL (short take-off and landing) air transport system, communications network for computers, urban development, pollution problems, policies for basic biology and basic research, and policy issues in development of primary and secondary industries. In addition, the Council recommended that Canada focus its scientific and technological effort through the creation of "major programs" designed to help solve some of the country's social and economic problems. These programs include a space program for Canada, water resources management and development, transportation, urban development, computer applications and scientific and technological aid to developing areas of the world.

In 1967, a Special Senate Committee on Science Policy was formed to consider and report on the scientific policy of the federal government with the object of appraising its priorities, organization, budget and efficiency. The first report, published in December 1970, describes what the Committee considered to be major deficiencies in the policy and the second, published in January 1972, contains specific recommendations on targets and strategies for the 1970s. The third volume of the report recommended specific changes in the federal structures concerned with science and technology.

The Ministry of State for Science and Technology is responsible for the development and formulation of policies for the optimum development and application of science and technology in Canada, the review and assessment of scientific and technological activities and programs within the federal government, and the enhancement of co-operation among the federal government and the provinces, public and private organizations and with other

nations. The Ministry is comprised of three branches: Policy, Program Review and Assessment, and Co-operation.

The Policy Branch is concerned with the development and recommendation of objectives and priorities for science and technology, the development and formulation of science and technology policies, the provision of advice and counsel on the scientific and technological implications of government policies or proposals, and the assessment of the impact of science and technology on Canadian society, now and in the future.

The Program Review and Assessment Branch reflects the enhanced advisory and co-ordinating authority given the Ministry in the Speech from the Throne in February 1974. The Branch is responsible for the formulation of science expenditure guidelines, the provision of systematic advice and support to departments and agencies in the development of their budgetary proposals relating to science and technology and, finally, the review of these proposals in conjunction with the Treasury Board. The Branch is also engaged in the development and promotion of improved methods of evaluating the effectiveness of science and technology policies and programs and good management techniques.

The third Branch, Co-operation Branch, has three major roles. First, it produces correlated data on Canada's scientific and technological resources and activities. Second, it facilitates the exchange of information on domestic and international policies, programs and activities. Finally, it develops the policies and co-ordinating mechanisms necessary to ensure that Canada obtains maximum benefits from participation in related international organizations and activities.

In 1972, the "Make-or-Buy" policy was announced by the Minister and was implemented the following year. The policy provides that new research and development requirements of the federal government be contracted to industry as much as possible rather than being carried out in government laboratories. The policy is intended to ensure that R&D results are translated more effectively into additional Canadian industrial capability. In 1974, an adjunct to the Make-or-Buy policy was introduced to provide for the funding of unsolicited research proposals received from outside the government.

In July 1973, a new policy was announced for the development and control of the essential elements necessary for the exploitation by Canada of off-shore resources. A key element of this policy is the stimulation of industry involvement in ensuring Canadian control of the industrial and technological ingredients essential to effectively exploit Canada's off-shore resource potential. The policy calls for special emphasis to be given to a wide range of marine science and technology programs. Work is proceeding on the implementation of the Oceans policy. One recommendation now being implemented is the development of the capability to operate on or below ice-covered waters to assist in the exploitation of off-shore resources.

In 1974 certain changes were made in the structure of federal financial support to university research. One of the major changes involved was the establishment of an Inter-Council Co-ordinating Committee reporting to the Minister of State for Science and Technology and chaired by the Secretary of the Ministry. The function of the committee will be to ensure some uniformity of standards and granting criteria between the councils now giving financial assistance to university research. This co-ordination will involve advising on the allocation of funds among the councils, ensuring coverage by the councils of all recognized disciplines, ensuring that the needs of inter-disciplinary research are met, and co-ordinating and advising on council programs as well as those of individual federal government departments engaged in supporting university research.

Finally, the Ministry publishes annually a survey of funds and manpower assigned by the federal government to scientific activities. Covering the natural sciences as well as the social sciences and humanities, the surveys are published under the title *Federal scientific resources — natural and human sciences*.

9.2 Federal agencies

9.2.1 The National Research Council

An outline of the historical development of the National Research Council of Canada appears in the *1969 Canada Year Book*, pp 388-389.

The role of NRC within the over-all Canadian research and development effort has been unique, and throughout the Council's long history this role has evolved continuously in response to new needs or opportunities. As an independent research agency with its own governing council, NRC was encouraged to develop a strong Canadian R&D capability and high quality scientific expertise available to governments, to the private sector and to Canadian citizens.

By the mid-sixties NRC had developed a highly competent group of laboratories and a multi-disciplinary research capability dedicated to national development. Through NRC leadership and support, university laboratories had developed strength in most scientific disciplines to the point where it was no longer necessary for Canadian students to seek high quality scientific training outside Canada. NRC also had made substantial progress in promoting and assisting research in industry.

During the last decade NRC policies have been directed toward greater and more effective utilization of this national research potential in support of Canadian needs and opportunities. In order to improve the effectiveness of Canadian research endeavours, continuing efforts were made to consolidate research programs and to promote closer research collaboration between industry, university and government sectors. Additional emphasis is now also being given to a number of long-term problems of national concern such as energy, food, transportation, building and construction.

Early in 1974 the federal government announced its decision to separate the University Grants and Scholarships Program from NRC and to set up a new granting Council to take over this function. In the past, NRC has from time to time "spun off" major activities it had developed, such as Atomic Energy of Canada Limited (AECL), Defence Research Board (DRB), Medical Research Council (MRC). However, the separation of the university grants function, which had been one of the corner-stones of NRC's broader science role in Canada, represents a more fundamental change. The present situation demands less emphasis on the general development of science and more emphasis on effective ways of using the demonstrated capability of NRC for national development. In future NRC activities will be largely centred around its laboratory programs and such extra-mural research programs as may be undertaken will be closely coupled so as to support or extend laboratory programs.

Program objectives have been reformulated and necessary modifications to program activities are being implemented. Three separate programs have now been defined, and each will be financially supported by a separate parliamentary vote.

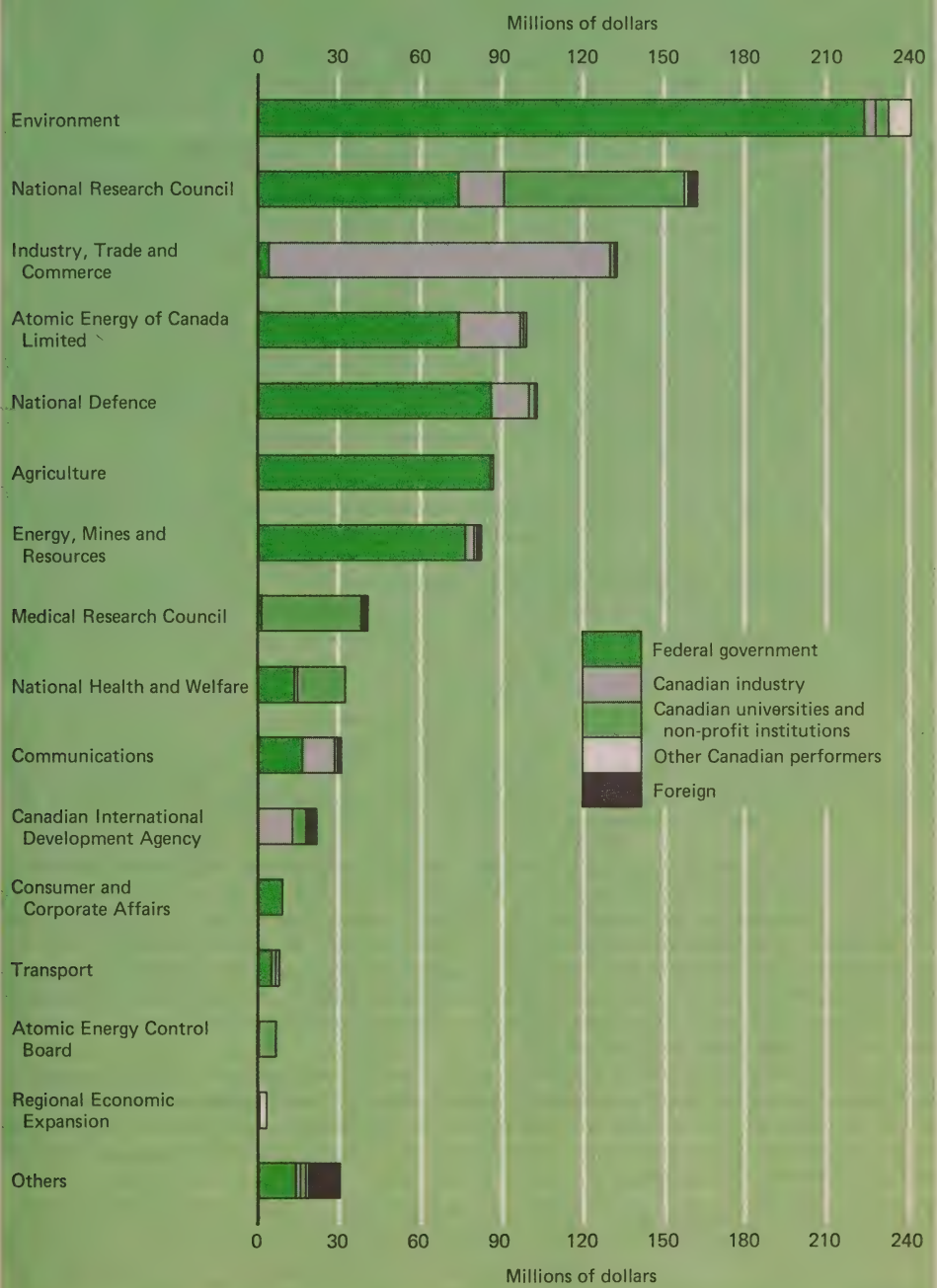
9.2.1.1 Program A: Natural sciences and engineering research

The objective of this program is to provide a national foundation upon which to build for the creation, application and use of knowledge derived from the natural sciences and engineering. The program includes basic and exploratory research in the natural sciences and engineering; research on long-term problems of national concern; research in direct support of industrial innovation and development; research to provide technological support of social objectives; provision and management of common purpose national research and development facilities as a service to industry, governments and universities; and research and services related to standards.

Nine laboratory divisions are presently carrying out research activities in support of this program. The Atlantic Regional Laboratory on the campus of Dalhousie University in Halifax, NS, operates a marine station on the shore of the Atlantic Ocean at Sandy Cove, near Sambro, NS. The Halifax laboratory has facilities for growing and recovering microbial and algal cells, for isolating and identifying plant metabolites, for studying catalysis, and elucidating biological and chemical syntheses with radioactive and stable isotopes. Special equipment is available for studying the kinetics of the reactions of gases with liquid metals and chemical reactions at high temperatures. The Halifax Laboratory houses the Atlantic Regional Station of the Division of Building Research and, temporarily, the neutron activation equipment of the Department of Geology, Dalhousie University. The marine station consists of a small group for supplying flowing sea-water for the culture and study of marine plants.

Research in the laboratory is conducted by a multi-disciplinary group, consisting principally of physical and organic chemists working in association with biologists and biochemists. Instruments, such as infra-red and ultraviolet spectrophotometers, mass

Federal government expenditure on natural sciences
by department or agency and performer,
year ended March 31, 1975



spectrometers, nuclear magnetic resonance spectrometers are used not only by the chemical specialist in his research, but also in collaborative projects with the biologists. Certain phases of the research work involve co-operation with staff of other government laboratories and universities, especially those in the Atlantic region. Some staff hold honorary appointments in the universities and assist in supervising graduate research. The emphasis of the chemical programs is on the separation, identification and analysis of compounds in mixtures, their chemical and biological synthesis and the molecular structure of the molecules. This includes inorganic substances such as metallurgical slags and silicates, inorganic and organic hydrates, water and organic substances of biological interest. The biological programs are concerned with biocides produced by fungi, the chemistry of the symbiotic relationship between fungi and algae in lichens, and the study of marine plants with an emphasis on marine algae.

The Division of Biological Sciences. The scientific program of this Division is pursued by a number of groups of scientists either structured formally into research units with a recognized leader or made up of flexible associations of scientists collaborating on an agreed short-term goal. The groups include many biologists, chemists, mathematicians and physicists whose collaboration allows a broad approach to the solution of significant biological problems.

During the last year there has been continuing collaboration with universities through the Ottawa River Project, by providing facilities and direction to graduate students and visiting professors, and by divisional staff functioning as Honorary Adjunct Professors. Interaction with industry also continues at a high level, particularly in the area of food technology and through contacts established by the liaison function within the Industrial Research Assistance Program. The Environmental Secretariat is involved in environmental matters outside NRC, both for the Canadian government and for international organizations.

The Division of Building Research was established in 1947 and carries on a comprehensive research program devised to meet the needs of the country for science-based information and knowledge in support of the construction industry. Its activities include technical support to Central Mortgage and Housing Corporation, technical and secretariat assistance to the NRC Associate Committee which has responsibility for the production of the National Building Code for Canada, and service on a large number of standards and technical committees, both national and international, as well as providing an information and advisory service to the industry generally. Commercial testing is carried out on a limited basis, when the special facilities of the Division are not available elsewhere.

The research activities are the firm core, supporting and feeding the other activities, and with a strong and highly beneficial interaction between them. Because of the emphasis on the information and advisory role, and the limited coverage of the industry's research needs which can be achieved at any given time, the Division has always sought to develop and maintain the closest possible links with all other agencies whose work has some relevance for building.

The Division of Chemistry covers a broad spectrum of work ranging from relatively short-term programs for practical application in the natural resource and chemical industries, to long-term fundamental investigations in selected areas of scientific and technological importance. Active fields of research are analytical chemistry, chemical engineering, colloids, high polymers, high pressure physical chemistry, hydrocarbons, kinetics, photochemistry and catalysis, metallurgical chemistry, metallic corrosion and oxidation, textile chemistry, chemical spectroscopy, molecular structures, organic spectrochemistry, organic synthesis, thermochemistry, and theoretical studies.

A typical program involves studies on membrane phenomena which have suggested a separation of constituents of solutions by osmotic action. Considerable potential exists for reverse osmosis as a large-scale engineering process for saline water conversion and other concentration processes. Applications to problems of environmental quality appear to be of particular importance at present.

The Division of Mechanical Engineering. The distribution of the theoretical and experimental research effort of the Division remains as follows: transportation engineering 45%, manufacturing technology 30%, standards and standardization 10%, computers in engineering design 6%, engineering and biological control systems 5%, medical and surgical instrumentation 4%.

The increased demand on all sides has been met by establishing a western laboratory in Vancouver and by encroaching further on long-range research projects. Previous research has led to a variety of new projects such as a North Sea oil drilling island, and development of a wave-absorbing breakwater design, first used at Baie-Comeau.

The National Aeronautical Establishment (NAE). The aerospace and avionics research programs of Canada have been, historically, an area where the performance of research and development has been heavily weighted in favour of industry, and where government in-house R&D (according to Science Council Special Study No. 12) has been maintained at a level of about 11.5% of the total national aeronautical R&D program on the basis of cost. Of this in-house activity, the NAE has been responsible for about one third of the performance that has been so funded, or 3.5% of the total aeronautical R&D funds. It has used these funds, over the years, to furnish and employ major items of experimental equipment such as wind tunnels, structural test rigs, experimental aircraft and standards as national resources and, in accordance with the explicit requests of the industry, for the use of the industry. The services which the NAE is committed to provide for the aircraft industry have not been abridged by the recent difficulties and corresponding contraction of the aircraft industry. On the other hand, diminishing requirements of the industry have permitted some measure of re-orientation in the work program of the NAE. As a result of its competence and equipment in fluid dynamics, structural theory and analysis, materials technology and dynamics, NAE is well equipped to tackle a variety of problems of current importance both in engineering and industrial areas and in social and regulatory areas. This has allowed the Division to accommodate and achieve a more appropriate compatibility with the visible changes in national objectives, and has led it to vehicle safety, in material technology, in various applications of non-aeronautical aerodynamics, and in certain ecological problems. In following this course, NAE has answered either to direct industrial requests or to government requests for research in areas that have hitherto been neglected.

The Division of Physics. The principal activities of this Division can be grouped into three related areas: the maintenance of basic physical standards and the calibration of measuring instruments for industries, governments, and universities; general research programs in selected areas of physics; and improvement of the industrial and social climate of Canada by providing advice and information to industries and governments and by providing designs for industrial products.

General research programs are carried out in a number of areas, the largest programs being in space physics, metal physics, plasma physics, photogrammetry and spectroscopy. In these programs the Division endeavours to develop a research capability which will make substantial advances in the understanding of basic principles, and at the same time use the expertise for a variety of other industrial and social purposes.

The efforts of the Division to improve the industrial and social climate of Canada are not located in one particular section of the Division but are interwoven with the general research and standards programs. The greatest contribution of the Division in this area is in the form of advice and information on technical problems. Many staff members serve on industrial and government committees dealing with standards and safety. The staff spends a considerable portion of their time in numerous direct contacts with technical personnel employed by industry and government. The Division operates a school which each year deals with methods of measurement in one or two selected areas of physics at the level required by industry. Finally, considerable effort is devoted to the development of instruments which are suitable for industrial production, and patents on many instruments have generated considerable income over the past few years.

The Prairie Regional Laboratory is engaged in measuring and controlling the influences of genetics, environment and physiological age on the growth and reproduction of micro-organisms, yeasts, algae, plant cells, and higher plants. Fundamental studies provide the necessary groundwork for the practical and applied research in agricultural production and the associated industries. The laboratory has been organized into four sections: microbial physiology and biochemistry, plant biochemistry, chemistry of plant products, and biotechnology.

The shortage of proteins and the potential for legume seeds to meet part of the demand for both quality and quantity are being given global attention by national and international organizations concerned with nutrition and production. In line with this interest, the Laboratory has placed increased emphasis on research in nitrogen fixation and legume seed crops. Studies in genetic variability of peas for nitrogen fixation capability have the objective of increasing the factor through the plant as well as the micro-organism. Studies of plant cells are directed to interrelationships of cells and micro-organisms. Studies on photosynthesis have been included in the biochemistry with the objective of increasing nitrogen fixation through chemical control. Research on utilization of field peas and fababeans has been concentrated on production of flour, protein and starch by pin milling and air classification. Use and evaluation of the products are under study by a variety of Canadian industries and in a number of departments at the universities of Saskatchewan and Manitoba. Significant progress in research on cell fusion, transformation and morphogenesis indicate that increased efforts are warranted to develop this technique for the improvement of agricultural crops. A practical application is being made to the production of a virus-free Cassava plant in a contract with the International Research Development Centre.

The Radio and Electrical Engineering Division undertakes engineering projects of interest to Canadian industry and fundamental research in electrical science. The engineering program in the high-voltage field includes studies of corona loss and radio interference from direct-current transmission lines, and the development of current comparators for very accurate measurement of current and voltage ratios. An effort is being made to develop accurate tests of the lifetime of solid dielectrics used as insulation in high-voltage cables and components. The high-frequency laboratory is responsible for maintaining the national standards of RF power, voltage, impedance and attenuation and has recently participated in an international intercomparison of these standards. Assistance is given to industry in the design, production and evaluation of new equipment, and in the solution of such problems as the design of antennas, microwave film and paper dryers and moisture sensors. Many devices are now in commercial production.

In the field of bio-medical engineering, new techniques in electrocardiography and echoencephalography have been developed, a study of cardiac stimulation thresholds is under way and instruments that will contribute toward the rehabilitation of handicapped persons have been produced. The Division has co-operated with members of the medical profession in the establishment of safety standards in the use of electronic equipment in hospitals for treatment and diagnosis.

Much of the research in the computer laboratories of the Division is concentrated on the problem of communication between man and computer. Computer graphics techniques have been adapted to provide a versatile tool for the film animator and for the composer of music. Problems arising in computer-aided learning systems are being investigated, and a touch-sensitive screen has been designed and patented, an extremely flexible input device that permits an untrained person to communicate effectively with a computer. Special data recording and analyzing systems have been developed to suit widely varying scientific programs.

Fundamental research is carried out in solid state physics, wave propagation, quantum electronics, and the behaviour of particles at ultra-high vacuum. Patents have been issued recently on a ruby laser which is self-Q-switched, and on a thermal transpiration vacuum pump.

The Space Research Facilities Branch (SRFB) is a support organization which provides services to the Canadian scientists who are doing upper atmosphere and space research by means of sounding rockets, balloons and ground-based instruments. The main services provided include the procurement of rocket motors, the procurement and engineering monitoring of instrumented rocket payloads, the planning, designing and operation of temporary and permanent launching facilities, the acquisition and recording of scientific data, and the conversion of such data into formats which are readily usable by the scientists who are being supported. In addition, SRFB prepares and publishes engineering reports on all launches as well as general annual reports covering all Canadian activities in space and upper atmosphere research. The Branch carries out its procurement and operational activities by means of production and service contracts with Canadian industry.

The principal permanent facility operated by SRFB is the Churchill Research Range (CRR), near the town of Churchill, Manitoba, on the shore of Hudson Bay, in a location where important geophysical events occur and which provides an excellent rocket impact area. The CRR is a fully equipped subarctic research range which has been operated by NRC since 1965. In addition to its regular scientific rocket launchings, the CRR operates various ground-based instruments continuously and is a meteorological sounding rocket station in the North American synoptic network. The CRR assists in scientific balloon launching programs involving balloons up to 1 million cubic metres, carrying payloads as heavy as 1,000 kg. The Branch also operates the Great Whale Geophysical Station at Poste-de-la-Baleine, Quebec, which is manned by technicians to record auroral phenomena. There is also a small rocket launching facility at Resolute, NWT, which is manned as required.

The Institute of Astrophysics. In recognition of Dr. Gerhard Herzberg's outstanding scientific contributions, his interest in and contributions to astrophysics, and his distinguished role as a scientist and scientific leader at NRC, this new Institute is to be named "The Herzberg Astrophysics Institute".

While details regarding the structure and program of research of the Institute have yet to be developed, the general concept has been under consideration for some time. Basically, this involves bringing together NRC research in optical and radio astronomy, cosmic ray research and laboratory astrophysics. By consolidating existing strengths and resources it is hoped not only to achieve a more effective capability to exploit new scientific opportunities but also to develop in Canada a centre of scientific excellence in this field. The eventual availability of an important new telescope in Hawaii and related facilities and techniques, as well as the need for a stronger focal point in Canada for research in astrophysics, were also important factors in the decision.

Industrial Research Assistance Program (IRAP). The main thrust of NRC's effort in support of industrial innovation and development is channelled through this program. Companies participating in IRAP hold full responsibility for carrying out research in their own facilities or under subcontract to Canadian universities, provincial research councils or commercial laboratories. They retain all titles and rights to the results of the jointly funded research. The object of the program, in which NRC and the company contribute approximately equal shares, is to provide financial assistance to research teams engaged on projects of more than usual significance to the company's future which also hold some promise of making a significant contribution to the economic well-being of the country.

An example of IRAP support that produced significant results can be found in the records of the Canadian company that used funding from the program to develop a novel method of surveying for deposits of natural gas and oil. This technique depends on the determination of the helium content of air samples taken from the soil. Equipment and techniques for sampling and analysis have been developed, and surveys carried out over known deposits and over areas known to contain fossil fuels have indicated that the method has potential value as an exploration tool. Currently, the company is working with a number of oil companies in the testing of its method under field conditions.

Associate Committees have existed during the entire history of NRC, their beginnings and duration being as varied as the subject areas they encompass. While some committees have been in existence for relatively long periods of time, others are of recent origin. Still others, having fulfilled their purposes, have been disbanded.

Associate Committees can be grouped into five categories, and variations thereof, based on the reasons for their formation. One type of Committee might be called a precursor to a scientific society, with interests being focused around a relatively new or neglected scientific discipline. An example in this category is the Associate Committee on Quaternary Research, set up to co-ordinate and stimulate quaternary research in Canada. The second type of Committee is formed in response to a clearly identifiable problem area, particularly when solutions require a broad range of skills. The Associate Committee on Bird Hazards to Aircraft is one typical example. A third type of Committee is formed to act in an advisory role in an area of research closely related to work in the NRC laboratories.

In a number of areas where federal and provincial governments share jurisdiction, "neutral form" Associate Committees play a valuable role. An example is the Canadian

Committee on Forest Fire Control which provides a forum where representatives from the federal and provincial forestry services and universities are able to discuss common problems, co-operate in research programs and exchange information.

A fifth type of Committee is set up to act as a Canadian touch-point for membership in an international organization. Instances in which this type of Committee has been transformed into a national organization outside the NRC framework include the Associate Committees on Radio Science and the Associate Committee on Culture Collections and Micro-organisms.

Associate Committees participate in international scientific programs such as the Hydrological Decade and the International Biological Program. They also co-operate with the laboratory divisions of NRC. Examples are the Associate Committees on the National Building Code and National Fire Codes, under the Division of Building Research.

9.2.1.2 Program B: Scholarships and grants in aid of research

This program will continue to be administered by NRC until the proposed Natural Sciences Research Council is established. The objective of the program is to promote and support the development and maintenance of research in Canadian universities and the provision of highly qualified manpower in the natural sciences and engineering. The program has three principal sub-objectives: to support excellence in research for the creation of new knowledge in the natural sciences and engineering; to promote and support the development of research in selected fields of regional and national importance, and to assist in the provision and development of highly qualified manpower. The program includes peer-adjudicated grants, developmental grants, highly qualified manpower training and development, and national and international activities.

Peer-adjudicated grants. The majority of grants for university research, which cover research expenses and equipment costs, are awarded to selected individuals or groups on the basis of peer adjudication, that is, on the basis of the merit of their research proposal and their proven excellence in research, be it fundamental or applied, as judged by a committee of their peers. During the last year, some 5,300 individual scientists and engineers were supported through these peer-adjudicated grants which form the backbone of NRC support to university research.

Developmental grants are negotiated with institutions, groups (including multidisciplinary groups) and individual scientists, having as their objective the creation of research programs, special research projects and major research installations, and the regional development of research capabilities.

Grants negotiated with a university or university consortium are designed to support, for a limited period, a group of researchers working in a given field with an integrated program of research directed toward a specific goal. The objective may be to achieve a better disciplinary or regional balance of the Canadian research effort, to consolidate the Canadian effort in a field which is too fragmented, to promote multidisciplinary research and accelerated effort in areas which are important to the economic, social or scientific development of Canada, or to encourage university research of interest to, and carried out in collaboration with, local industry. The emphasis in all such cases is on programs of research toward the accomplishment of very specific goals.

Grants for Project Research Applicable in Industry (PRAI), announced in 1972, are intended to facilitate the transfer of research results from the university laboratory to Canadian industry. PRAI grants complement other types of NRC grants by providing short-term additional support to university staff whose research has led to the identification of a specific and novel technique, process or product which promises to be of value to Canadian industry. A PRAI grant enables the staff member to undertake the research required to advance the technique, process or product to the point at which industry can judge adequately its commercial feasibility and the results can be transferred appropriately to industry. Projects must be undertaken in collaboration with an interested company or companies in Canada.

In 1971 the National Research Council created a new program of grants to universities designed chiefly to improve the infrastructure for research in selected Canadian universities where special circumstances were preventing existing research capabilities from making adequate scientific and technological contributions to society.

The program is aimed at helping university staff members to develop their potential to enable them to apply more successfully and in greater numbers for regular NRC grants. In

making awards, NRC officers work closely with universities and provincial bodies to avoid unnecessary overlapping and to ensure the acceptability and effectiveness of the program.

It is in this spirit that NRC, in the course of the last year, established a complementary program of "Attachés de recherche" for Quebec francophone universities.

Highly qualified manpower training and development. The method used by NRC to achieve its objectives in the training and development of highly qualified scientific and engineering manpower is the award, through national competitions, of scholarships and fellowships to graduate students, postdoctorate fellows and senior scientists and engineers in universities and industry.

During the last year, 2,080 postgraduate students were enabled, with NRC support, to pursue studies leading to more advanced degrees (MSc or PhD) and 231 postdoctorate fellows had the opportunity of adding to their experience in their specialty.

Industrial postdoctorate fellowships are designed to provide up to two years of industrial experience for recent PhD graduates and, at the same time, to encourage Canadian industry to come in contact with some of the highly qualified graduates.

Fellowships are awarded for one year but may be renewed for a total period of tenure of 24 months. Eighty-seven doctoral graduates are now acquiring industrial experience and making a contribution to Canadian industrial firms as a result of NRC support. Of the 92 fellows who have terminated their tenure, 59 have chosen careers in industry.

National and international activities. The National Research Council administers and provides for Canadian participation in many international scientific activities, including a large number of international organizations. NRC is responsible for ensuring appropriate Canadian participation in the activities of these organizations and for providing adequate liaison between them and the Canadian scientific community. This responsibility is delegated in most cases to an appropriate National Committee established by NRC for this specific purpose. National Committees are representative of Canadian interests in the field in question, with members being drawn from industry, government and the universities.

9.2.1.3 Program C: Scientific and technical information

NRC's basic objective regarding STI is to facilitate the use of scientific and technical information by the government and people of Canada. This is achieved by providing and maintaining services associated with scientific and technical information to meet the needs of the government and people of Canada; conducting research into the need for and methods of accomplishing the transfer of scientific and technical information in response to user needs, and participating in the over-all provision of library and information services.

The program has three main thrusts: Information Services requiring the operation and support of services to provide for the collection, storage, retrieval, analysis and transfer of STI, and support for the publication of journals of research in engineering and science; Network Implementation involving the implementation and maintenance of a Canadian network of STI services and a referral service network, including the establishment of links with other national and international networks and services; and Research and Development which includes determining the requirements for the collection, storage, retrieval, analysis and transfer of STI, improving these and other related processes, developing new processes to meet the demonstrable needs of the users and developing standards, procedures and processes for intersystem exchanges of STI through participation and agreement with other national and international organizations.

In 1974, NRC's two main information delivery systems, the Technical Information Service and the activities previously conducted under the National Science Library, were combined to form the Canada Institute for Scientific and Technical Information (CISTI). In CISTI, NRC has concentrated its principal information transfer systems into a single point of focus for the use of the evolving Canadian network of STI services.

The complex of resources and services formerly known as the National Science Library (a main collection and nine divisional branches) continues to serve as the library system supporting both the NRC laboratories and the various CISTI services; simultaneously it reinforces and supplements the libraries of other institutions and continues as the focus of the Canadian interlibrary loan network in science and technology. In brief, it is a CISTI information service which provides alerting, searching and delivery systems for published information primarily for scientists, engineers and related professions. It is a national resource, reinforcing and supplementing the collections of other institutions and serving as an information centre for the development and operation of innovative national STI services.

The other founding component of CISTI, NRC's Technical Information Service (TIS), is an information delivery service designed to assist in the technical development of small- and medium-sized Canadian manufacturing enterprises. Its services are intended for firms that have little or no technical library facilities, engineering or research staff. Such companies, generally employing fewer than 200 people, represent about 90% of Canada's manufacturing enterprises and account for nearly half the industrial production and employment in this country. Large enterprises are also assisted to solve those problems beyond the expertise of their own personnel.

The chief characteristic of TIS is its field service through which it maintains direct personal contact with companies. Field officers (all of whom have themselves worked in industry) are located at 16 offices across the country, thus ensuring that approximately 80% of potential users are within 50 miles of a field office. The newest office was opened in St. John's, Newfoundland in 1974. Six of the field offices are operated by provincial research councils and foundations. Working toward the general objective of bringing manufacturing operations to a level in keeping with the current level of technology in a given industry, TIS engineers and scientists visit plants in their area, make clients aware of the availability and value of technical information and assist them in identifying and resolving technical problems. The direct, in-plant, person-to-person contact between the user and TIS Field Technical Advisors is the essential element of successful technology transfer to small industry.

The field services are supported by a group of specialists in the Technical Information Service sector of CISTI. It is organized into three main sections: the Technical Inquiries Section which answers specific questions related to industrial processes and engineering sent in directly by companies or through the field offices; the Industrial Engineering Section which provides information on production operations to small companies which are not aware of the industrial engineering techniques that can be applied in these areas to improve productivity, or which cannot, for various reasons, employ consultants; and the Technological Developments Section which operates from Ottawa, keeping companies aware of the new advances in technology and research applicable to Canadian industry.

The results of research become a contribution to knowledge only when they are published and made available to the scientific community to examine, assess and use. As a service to Canadian science and as a Canadian contribution to the world's scientific literature, NRC publishes the Canadian Journals of Research covering the fields of biochemistry, botany, chemistry, earth sciences, forest research, geotechnology, microbiology, physics, physiology and pharmacology, and zoology.

In 1972 the publications committee of the newly-formed Canadian Society of Civil Engineering asked NRC to undertake publication of a new journal to serve their field. The first issue of the quarterly *Canadian Journal of Civil Engineering* appeared in September 1974. The 11 Journals publish approximately 2,500 papers a year, and about two thirds of these originate with Canadian scientists.

9.2.2 Atomic Energy of Canada Limited

An appreciable proportion of the world's fossil-fuel resources has already been consumed by a comparatively small segment of the world's population. This rate of consumption is increasing, the increase reflecting not only population growth but also increasing per capita energy demands. Nuclear fission provides the only known, practicable means of reconciling the world's energy demand with available resources.

It is now clear that the western world is fully launched on the transition from primarily fossil-fuel electricity generating plants to nuclear-electric generating plants. Whether or not

future rates of growth of total energy consumption are reduced, nuclear-electric usage will grow as rapidly as resources permit to conserve fossil fuels for uses for which they are irreplaceable, if for no other reason.

With a parliamentary appropriation for nuclear research and utilization of \$89.4 million in 1973-74, the research and development activities of Atomic Energy of Canada Limited generate and support an atomic energy program that is comparable with that of the major nuclear powers. The development of CANDU (CANada-Deuterium-Uranium) power reactors provides a system which offers the prospect of abundant, low-cost electrical energy for the foreseeable future on a world-wide basis.

The unique feature of CANDU power reactors is the use of heavy water (deuterium oxide) as a moderator for slowing, or "moderating", the neutrons from nuclear fission to maintain the fission chain reaction. The high neutron economy obtained by using this moderator and employing neutron-transparent core materials (zirconium alloys) means that natural uranium may be used as fuel. The use of natural uranium in the CANDU system is incidental to the basic concept of neutron economy but its use at the moment has certain economical and political advantages and serves as a useful engineering design discipline. The use of a natural-uranium fuelled reactor system is not dependent on one of the few countries providing uranium enrichment services and is able, for a comparatively modest capital outlay, to establish a domestic fuel fabrication industry. This, together with the simplicity of the technology of the CANDU reactor, makes it a particularly good system for those countries wishing to establish an indigenous nuclear industry.

Ontario has a major nuclear power program, Quebec and New Brunswick are introducing nuclear units (see Chapter 13, Energy); all have selected CANDU systems. Other provinces are expected to follow in the 1980s as electricity demand grows and hydraulic sites become fully developed.

CANDU reactors are operating in India and Pakistan; Argentina and Korea have placed orders for 600-MW units; other countries, including Denmark, Iran and Romania, have indicated interest. Britain has selected the SGHWR concept, which is similar to CANDU, for its next generation nuclear stations and is considering technology exchange with Canada.

The main R&D centres are the Chalk River Nuclear Laboratories (CRNL) in Ontario and the Whiteshell Nuclear Research Establishment (WNRE) in Manitoba. Both sites contain research and applied science divisions and operate research reactors and other major facilities. Total staff of the two sites is about 3,100, of which about 650 are scientists or engineers. The following paragraphs outline the scope of R&D effort.

Radiation hazards control. The objective is to protect man and his environment from harmful effects due to nuclear power. Work covers the spectrum from environmental research through health physics to measurement and control of plant emissions. Waste management methods assume greater importance as the power program expands. Plutonium hazards and their control are of central importance to development of advanced fuel cycles.

Control and safety. Control strategies and safety systems are developed to meet operating requirements while assuring the safety of plant personnel and the public. Techniques such as direct computer control and independent multi-channel logic have been pioneered and applied.

Fuel development. Power reactor fuel is required to tolerate sustained operation at design rating, power cycling dictated by load following requirements and fuelling operations, and abnormal conditions that could result from system failures. The work includes applied research on behaviour of fuel and sheath materials in stress, temperature and radiation fields, the release and influences of fission product gases, heat transfer, sheath and bundle structural integrity, and vibration effects. Methods range from metallurgical research through irradiation tests of fuel bundles with sophisticated instrumentation in research reactors, to post-irradiation examination in shielded cells.

Heat transfer and fluid mechanics. This discipline is of basic importance to fuel development, system design and safety analysis. Conditions unique to nuclear plants are: high heat release rates and power densities in fuel channels, the enormous amounts of heat transferred through steam generator tubes from reactor coolant to turbine steam, and the requirement for precise

knowledge of system behaviour in the event of a major pipe rupture. The basic tools are test rigs which simulate the systems of interest, and powerful analytical programs based on correlations of the experimental data.

Materials and systems. Design and development of nuclear systems taxes many disciplines in the fields of chemistry and materials. Zirconium is the basic constituent of structural alloys in the reactor because of its neutron transparency. Behaviour of the alloys when subjected to stress, temperature and neutron irradiation is studied at both the research and engineering levels. Strength, ductility and particularly creep properties are important. The corrosion behaviour of zirconium alloys and of the less exotic materials external to the reactor is extremely important because of their influence on system integrity, fouling of heat transfer surfaces and — perhaps most significant — deposition of radioactive corrosion products which impair maintenance access.

System design and assessment. The final design of a power reactor is the result of compromise. Cost and performance of a large number of reactors, each representing a different combination of design parameters, are computed in order to find the optimal design. The process is carried out by computer programs which contain sub-routines drawing on the expertise of many areas, to perform the design and cost calculations. Core design is the most complex segment because of the elaborate computations required to describe the properties of a reactor core and because the composition and behaviour of the core change as fissile material is burnt, fission products accumulate, and old fuel is replaced by new. The reactor physics programs are based on basic research data such as nuclear cross-sections and fission yields, and on experimental measurements of lattice assemblies in zero-energy research reactors like ZED-2.

Equipment, components and reliability. Reliability is one of the most important attributes of a nuclear generating station because of its influence on cost. The R&D contribution is two-fold: the development of reliability analysis techniques for use by designers, and R&D work to improve the reliability of equipment. Analytical methods have been developed and adapted from other industries and are now being routinely used in design; R&D retains a consulting role. Some areas of technology involved are wear and friction, materials, corrosion, vibration, fluid mechanics and mechanics of materials. Combined analytical and experimental effort has been applied to pumps, shaft seals, valves, heat exchangers and mechanical joints. Another aspect is development and application of non-destructive methods of quality control and in-service inspection appropriate to the nuclear plant environment. This frequently requires greater than normal sensitivity of measurement together with remote operation to avoid radiation.

Liaison and technology transfer. The work described above has a single objective: to improve the cost/effectiveness of CANDU systems. The improvement does not occur in the laboratory; it occurs in reactors operated by a utility. Virtually every R&D group communicates with industry or utilities through symposia, meetings, consultations, technical assistance, problem solving work in the field, and industrial development contracts. The laboratories are active participants in the power program.

Systems analysis. All future options are more complex than the once-through natural uranium CANDU cycle. The options involve fissile enrichment in the form of U^{235} or plutonium, added to uranium or thorium, in various types of reactor. They involve uranium enrichment facilities, fuel reprocessing plants, processes for remote fabrication, and waste management facilities. Development planning must be based on the answers to such questions as: which reactor-fuel cycle combination is most likely to optimize the consumption of capital and uranium in the Canada of 2010? The question is strategic; its answer, fundamental to R&D planning, requires comprehensive analysis of options and probable future conditions.

Advanced nuclear systems. The laboratories are also concerned with nuclear systems other than fission reactors. Current areas of interest are fusion power, electrical breeding of fissile material by fusion or spallation processes and uranium enrichment. World progress in fusion power development is closely monitored through normal scientific channels by research personnel who are competent to assess, interpret and contribute.

Electronuclear breeding of fissile material, plutonium from U^{238} or U^{233} from thorium, would make CANDU reactors virtually immune to uranium resource depletion. A system comprising a fusion reactor surrounded by a blanket of fertile uranium or thorium is one possibility, but no development is planned until feasibility of the fusion process has been demonstrated elsewhere.

The spallation process for neutron production is the long-term basis of our current laboratory work. It depends on a highly efficient accelerator to direct a beam of protons onto a heavy element target. Accelerator research and development for this purpose is a major activity and progress is exploited in medical therapy, industrial irradiation and research applications.

Heavy water processes. A high level of development is necessary to back up the rapidly growing heavy water production industry and to achieve cost reductions. AECL is directly responsible for the heavy water plants at Glace Bay, NS and LaPrade, Que.; plans to transfer the Port Hawkesbury, NS plant to AECL were announced in 1974. R&D activities relating to heavy water plants are analogous to power system activities and draw on many of the same disciplines.

Underlying research. Fundamental research has always been, and must remain, the basis of AECL's development, and the major special tools for this research are the three high-power experimental reactors WR-1, NRU and NRX. Not only do these reactors have provision in their cores for the irradiation of materials over extended periods of time, but special isolated fuel channels, or loops, are provided for the in-reactor testing of different fuels and coolants — such testing being fundamental to the Canadian power reactor program. Horizontal holes through the reactor shielding allow intense neutron beams to be directed to various experimental research facilities.

The NRU reactor with its increased neutron flux and improved experimental facilities resumed operation in 1974. Programs in solid state and nuclear physics, as well as a host of related research fields are greatly enhanced by the upgraded facility.

A further major research tool at CRNL is the "MP" tandem Van de Graaff accelerator. Among its many uses are precise studies of the structure and excited states of heavy atomic nuclei. Data acquisition and analysis equipment associated with the accelerator is on-line to powerful data processing systems. Successive improvements have greatly increased the usefulness of the tandem. It has recently been fitted with a Pelletron charging system. The planned addition of a superconducting cyclotron post-accelerator will open an enormous research field in the interaction of heavy particles.

Photonuclear physics, using beams of gamma-rays and electrons to produce photo-neutrons and photofission promises high yields of new information.

Research in Chemistry and Materials Science is concerned with isotope exchange chemistry, analytical sciences, chemical and physical effects of radiations, properties of surfaces and the relationship between the microscopic structure of solids and their physical and chemical properties.

Research with the new High Voltage Mass Separator is increasing emphasis on programs of radiation damage, atomic collision and ion penetration in solids. Studies of the chemical effects of radiations relate to reactor systems and to biological processes.

Surface chemistry and physics are of growing importance in solving corrosion, wear and mass transport problems. Advanced electron microscope techniques and other materials research methods yield information leading to improved materials for reactor systems.

Environmental research covers a wide spectrum of activities within AECL and at several Canadian universities under research contracts. At WNRE a Field Irradiation Gamma (FIG) Project is under way to determine the ecological changes resulting from an increase in background gamma radiation levels. At CRNL an entire lake is used as a real life laboratory to study the effects of trace amounts of radiation on the food chain and ground water systems. Further work is in progress to examine the impact of thermal enrichment upon the ecosystem. Evidence is mounting that some degree of thermal enrichment in cold environments is beneficial to the production of aquatic food supplies. This exciting new field (Aquaculture) will become the subject of more intense studies in the future on both national and international levels.

9.2.3 Department of Agriculture

The Research Branch is responsible for a major program of research on agricultural plants and animals, and covers all phases except for economics research (Economics Branch), animal pathology (Health of Animals Branch), and grain quality (Grain Research Laboratory). The program is located at some 40 units across the country from coast to coast with headquarters at the Central Experimental Farm, Ottawa. There are about 800 professionals on the staff with supporting teams of sub-professionals including technicians and labourers.

The research activities are planned and co-ordinated by a group of about 15 research co-ordinators located in Ottawa. They each carry commodity or disciplinary responsibility for advising line managers on the nature and extent of the research program. This is centred about a system of national research objectives and specific, clearly defined goals. The latter number 64 and comprise a diverse but effectively integrated program designed to identify and solve the problems faced by farmers in the various sectors of the industry.

Individual research units and stations are each administered by Directors who, themselves, have been working scientists and have advanced through the ranks of the research staff. This is likewise true of the co-ordinators and line managers in headquarters. Line responsibility at Ottawa is in the hands of three Assistant Directors General who in turn answer to the Director General and Assistant Deputy Minister (Research) for Agriculture Canada.

Most research units, with the exception of a few specialized ones such as the disciplinary institutes, carry a program of balanced research involving crop or animal production, protection from pests, and utilization. Production research starts with plant or animal breeding to develop improved cultivars or breeds. These are essential to efficient production under the unique Canadian conditions and recent introductions include several new forage grasses, new cultivars of rapeseed and other oil seed crops, a new scab resistant apple, the first hardy dwarfing apple rootstock, several high quality peaches, a new strawberry for the east and one for British Columbia, an improved raspberry for the Fraser Valley, new vegetable varieties including a seedless cucumber for greenhouse production, a new table stock potato variety, several new ornamental shrubs, among them a prize winning hardy rose and four hardy rhododendrons, new varieties of wheat resistant to disease and having improved quality to maintain Canada's world-wide reputation for high quality wheat, a new feed barley and one for malting purposes, several varieties of oats including one with high protein for processing, a number of inbred lines of grain corn for use by commercial companies to produce special hybrids, new varieties of flue-cured and cigar tobacco, new field beans, peas and even buckwheat. Altogether the plant breeding program of the Branch has a massive effect on crop production in Canada.

Animal breeding, though complex and requiring much longer periods of time to achieve new breed development is making steady advances in a parallel program. Perhaps the most spectacular in recent years has been the use of "exotic" strains of beef cattle imported from other countries through the special and unique facilities of the Animal Quarantine Station at Grosse Île, Que. The hybrids and further backcrosses achieved through the use of these animals has made a significant breakthrough in the beef cattle industry of North America.

Other animal breeding research with such species as sheep and swine has attempted to increase the efficiency of reproduction through intensive physiological studies on the reproductive productivity related to environmental conditions and hormonal action.

Other research on the husbandry and management of crops and animals forms an important sector of the Branch program, and has led to new and improved procedures for increasing the efficiency of growth and protection from plant and animal pests. Much of the latter is through the use of chemical pesticides, but because of some of their undesirable side effects, much research is being centred on attempts to develop integrated control programs that utilize both biological factors, such as predators or parasites, and the specification of more precise chemicals that kill only the undesired species without injuring other kinds that are beneficial. There is also extensive research to determine the effects of the pesticides on the surrounding environment, and to develop procedures and chemical compounds that are less toxic and less persistent, yet capable of performing the necessary control action. In essence, the procedure has changed from a "shot-gun" approach to a highly specific and sophisticated program.

Finally, the use of plant and animal products by the consumer is receiving greater attention and research is being conducted to preserve either in fresh or processed form the high quality and nutritional characteristics of Canada's agricultural products. The uniqueness of the climatic and geographic conditions of this country provide both assets and liabilities in agriculture, and the research of the Branch is designed to exploit the beneficial aspects of these conditions and counteract the existing deficiencies that tend to put producers at a comparative disadvantage. The policy aim of the Department is a viable agriculture and the extensive program of research is designed to help achieve this aim.

9.2.4 Department of Communications

The Communications Research Centre (CRC) of the Department of Communications, with a staff of about 550, carries out research and development in a number of areas related to communications. The main CRC site is at Shirleys Bay, Ont., 15 miles west of Ottawa; there are also a number of experimental sites, some at remote northern locations such as Resolute Bay.

Communications technology satellite. The largest single activity of the Centre is the Communications Technology Satellite (CTS) program. This experimental satellite, due to be launched in 1975 is being assembled at CRC from components designed and manufactured by Canadian industry, and using experience gained from the successful Alouette and ISIS satellite research programs of the past decade. The program is a joint venture with the US National Aeronautics and Space Administration (NASA), who are providing the launch and some advanced components. Other such components, including the "blanket" of solar cells, are being obtained under a co-operative arrangement with the European Space Research Organization (ESRO).

Twenty different organizations from the federal and provincial sectors, universities and industry have supported and are taking part in a variety of technical and socio-economic experiments to test and exploit the capabilities of the high power super high frequency satellite. All the ground station facilities for these experiments are being furnished by CRC, who are also responsible for the co-ordination of the total program.

A Memorandum of Understanding on the international aeronautical satellite (AEROSAT) program has been signed by ESRO, FAA(US) and Canada and work on the Canadian portion of this project is well under way. Further progress on an international maritime satellite system is held up pending intergovernmental decisions.

Communications systems. A rapidly developing field and market is that of data terminals, such as are used by airline ticket agents, bank tellers, credit card checkers, etc. An exhaustive study of the possibility of developing terminals in Canadian industry was made, as a result of which it was decided that the best opportunity for such participation lies in a mobile data terminal for use by police, taxis, truckers, etc. A joint development project between CRC and the RCMP has been started with the intention of producing a terminal which should have wide acceptance among the police forces of Canada.

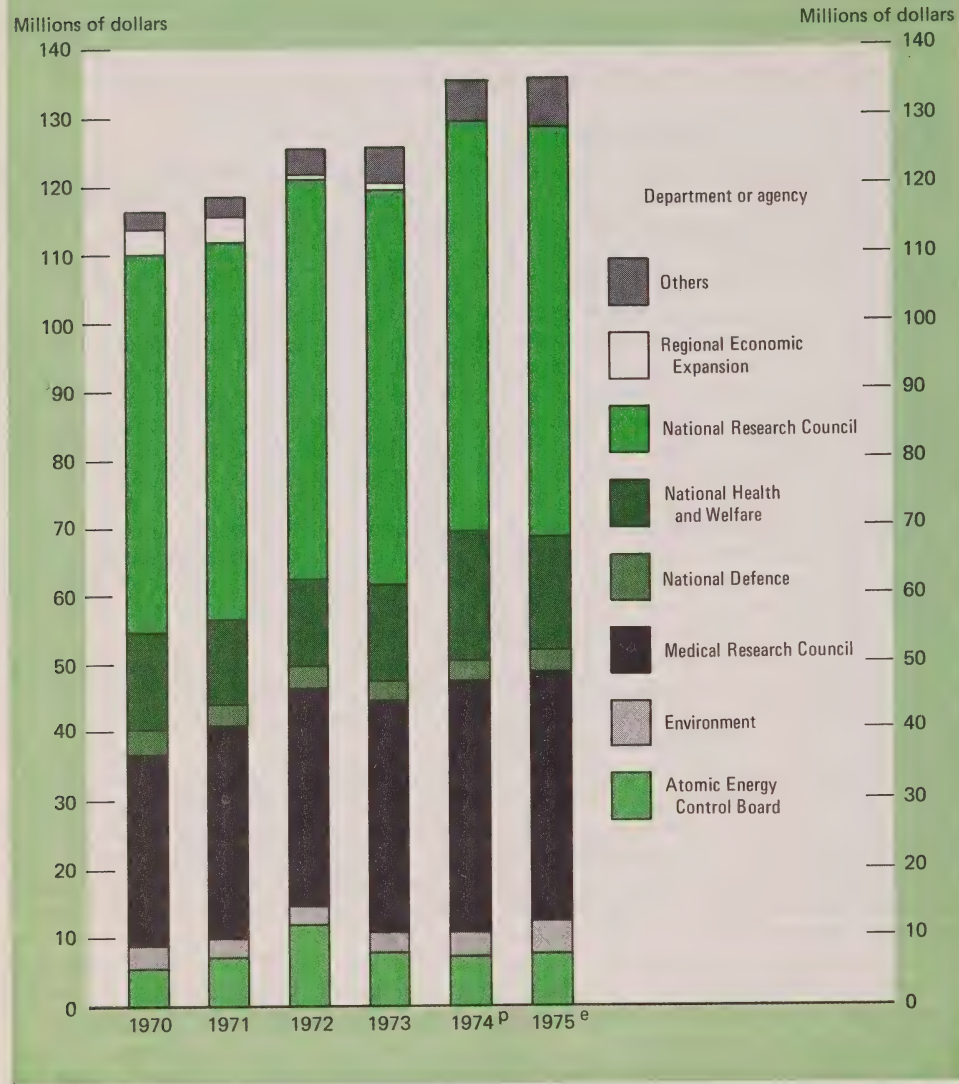
Studies are also being carried out on the Long Distance Network (voice and television) and on Data Communications systems, together with work on small terminals for satellite systems and related modulator-demodulator and coder-decoder equipment for analogue and digital transmission, respectively.

Radio research. In addition to the normal work on propagation, noise and ionospheric studies, interesting tests have been carried out in conjunction with the Department of Energy, Mines and Resources into the feasibility of using single sideband high frequency radio circuits to transmit still pictures to the high arctic. In particular, images of sea-ice received at the Prince Albert satellite tracking station from the US Earth Resources Technology Satellite (ERTS) were transmitted by continuous grey-scale facsimile to ships in the Arctic. The experiments suggest the possibility of offering a valuable service to vessels operating in this hostile environment.

Several radar programs, some for the Department of National Defence, have been carried out including one designed to study various methods for measuring the thickness of ice. Some of these methods have given very promising results.

Informatique. Work has continued on a number of aspects of teleconferencing, a subject which involves a broad spectrum of disciplines from acoustics to electronics to behavioural

Payments to Canadian universities and non-profit institutions
for natural science R&D, years ended March 31, 1970-75



science. In particular, a year-long experiment on a system connecting CRC with the Department of Communications headquarters in downtown Ottawa was concluded and reported on. The report indicated, among other things, that teleconferences tended to be shorter and more concise than face-to-face meetings. This finding has been borne out by studies in other parts of the world. It is expected that the introduction into the government service of satisfactory teleconferencing facilities would considerably reduce the expenditures on travel by public servants. On the more purely technical side, a contract has been let to a Canadian industry to carry out the design of a teleconference terminal using a combined loudspeaker-microphone and advanced circuitry to eliminate the need for voice switching. A close watch is being kept on developments in other countries.

Although optical transmission is not expected to come into general use until the 1980s, advantages and problems are such that an active program is fully justified. CRC has been engaged in all aspects of the field, including the electronics of the transmitting and receiving equipment, the design of optical fibres and methods of connecting them, and the mechanisms leading to noise generation within the fibres themselves. The program is being closely co-ordinated with that of industry.

Fruitful collaboration has taken place between CRC and the Bureau of Staff Training and Development at Carleton Place on the whole subject of the use of telecommunications techniques and media in the work of the Bureau.

Outside research. The Department's program of research contracts to universities has been continued under four major categories: space program, communications systems, radio and radar, and socio-economic and regulatory matters. Some 50 contracts, involving a commitment of about \$700,000, were approved in the 1974-75 fiscal year, with about 30% of this total being devoted to research in the socio-economic and legal-regulatory aspects of communications in modern society.

During the year, a trial program was set up designed to encourage R&D within the Canadian communications industry. With funding of \$500,000, eight contracts were let for specific innovative projects ranging from new equipment for teleconferencing to the design of rigid deployable solar arrays for spacecraft.

Another program intended to improve relationships between CRC on the one hand, and industry and universities on the other, involved the appointment of liaison officers by both the Centre and the company or university concerned. Each of these individuals, in addition to his regular work, is charged with the responsibility of making and keeping himself familiar with the make-up and activities of the organization to which he has been assigned, as well as acting as a focus for communications between it and his own organization. Both manufacturers and carriers have been included in this plan.

Expenditures. The Department of Communications spent a total of \$33.4 million on research and development during 1974-75, of which \$14.3 million was in-house, while \$15.5 million was contracted out to industry and universities. The remaining expenditure was for capital projects.

9.2.5 Department of Energy, Mines and Resources

The objective of the Department of Energy, Mines and Resources is to ensure the full and effective use of Canada's energy and mineral resources for the benefit of all Canadians. Its mandate encompasses the development, co-ordination and implementation of federal policy governing energy and mineral resources and the carrying out of research to obtain the scientific, technical and economic information basic to the making of such policy. The Department, in addition to its administrative services, comprises three sectors — energy development, mineral development, and science and technology.

9.2.5.1 Energy development

The tremendous growth in energy consumption in the world's industrialized nations and the increasing awareness that Canada's energy resources constitute a precious and not inexhaustible patrimony whose use must be carefully planned and regulated have given new weight and responsibility to the Department's Energy Development Sector. Its functions are reviewed in greater detail in Chapters 12 and 13.

9.2.5.2 Mineral development

The Mineral Development Sector identifies and evaluates trends affecting Canada's mineral industry by studying the entire mineral industry from geologist to user — exploration and development, processing, transportation, marketing and consumption. The information provides a basis for decisions to be taken within the Department and contributes to the development of resource policies. It carries out the administration of the Emergency Gold Mining Assistance Act; advises and participates in the programs of several other federal departments and task forces; represents the Department on several national and international committees; and co-ordinates the Department's foreign aid activities with the Canadian International Development Agency.

9.2.5.3 Science and technology

The Science and Technology Sector carries out a broad range of scientific research pertaining to the earth sciences — geodesy, geology, geophysics, mineralogy, metallurgy and geography. The Sector comprises, in addition to the Surveys and Mapping Branch whose functions are described in Chapter 1, the Geological Survey of Canada, Canada Centre for Mineral and Energy Technology, the Earth Physics Branch, the Polar Continental Shelf Project, the Explosives Division and the Canada Centre for Remote Sensing.

The Geological Survey of Canada provides a systematic knowledge of the geology, mineral and fuel resources of the country and assists in the effective use and conservation of resources, and in the management and preservation of man's environment throughout Canada. Continuing research projects, especially those involving a major component of laboratory work, have given rise to the establishment of teams with unique capabilities in such areas as mass-spectroscopy and isotope dating, including: the development of instrumentation and continuing refinement of techniques in support of field research; geochemistry, especially projects in which new field techniques have been developed; biogeochemistry, involving geology, geochemistry and botany; clay mineralogy; and various geophysical projects, especially in the development of remote sensing devices. Research tools and systems that have been developed include: high resolution aeromagnetic survey systems; ground gamma-ray spectrometry; development of airborne gamma-ray spectrometry for the search for radioactive minerals; practical methods of field geochemistry for prospecting; field methods for detection of Radon-222 in streams and sediments to outline uranium-bearing areas; and a method of tracing mineral trains in glacial deposits back to source as an aid to prospecting. In addition, the Geological Survey has led the world in rapid reconnaissance geological mapping using helicopters and other aircraft, especially in the field techniques developed and applied to the mapping of the arctic regions.

The Canada Centre for Mineral and Energy Technology is an interdisciplinary applied science institution engaged in research in non-renewable mineral resources and metals. Its facilities include a Mining Research Centre which carries out research on such problems as stability of underground and open-pit mines, methods of rock breakage, problems of environmental engineering and methods of obtaining maximum performance in mining operations. The Centre's general objective is to provide leadership in ensuring a sound scientific base for new technology and in stimulating the application of advanced technology to the extraction, processing and use of minerals and fuels in Canada and in the improvement of metal products. Specifically, it aims to improve the efficiency of the mining, processing and use of mineral resources and of metals and alloys; to improve the recovery of low-grade mineral resources and to minimize waste; to recognize problems in industry and undertake research, or give advice, on methods of solving these problems; to predict shortages and substitutions from technological market trends and to undertake research on mineral resources of potential value. It plans its activities in terms of its mission-oriented research, conducting basic research only when purely scientific data are required for technological purposes. As a corollary, the Centre has had to build up additional facilities to support its specialized activities, such as facilities for the carbonization of coal, the study of corrosion, and for pilot-scale mineral processing and foundry investigations.

The Earth Physics Branch investigates the magnetic, gravity and seismic characteristics of the earth as a whole and of the Canadian land mass in particular. It utilizes the results of its research and of the research done elsewhere to obtain new and more detailed knowledge of the Canadian land mass, leading to improved magnetic and gravity charts, knowledge of earthquake hazards and detection of underground nuclear explosions. Some major programs are: studies on the properties and characteristics of the earth's crust and deep interior; study of the magnetic field in Canada and its variations, both to aid navigation and to investigate the ancient history of the earth; and study of variations in the gravitational field in Canada, relating this to the shape of the earth and to problems in accurate surveying. The Branch is concerned with the recovery of meteorites and investigation of meteorite craters. Branch scientists conducted the world's first systematic search for ancient meteorite craters using air photographs, maps and other information. Sixteen impact sites have been identified in Canada and a greater number of possible sites are under investigation. These investigations have been

distinguished by the broad approach taken to the problems of crater identification and analysis: gravity, magnetic, seismic, resistivity, structural, topographic and petrographic methods have all been employed; even more important has been the pioneering use of continuous diamond drilling to investigate the deep zones of a number of craters.

The knowledge so gained has application to the nature, origin and abundance of meteorites and to the history of the more stable parts of the earth's crust. The analysis of field and laboratory observations, coupled with pertinent experiments, has led to a better understanding of the dynamic properties of the earth's crust and the nature of its response to high-energy shock pulses. These results have application to the field of rock mechanics and to the contemplated use of nuclear explosions for large excavations and are of significance to the mining and oil and gas industries because large impact structures have sometimes formed or controlled the distribution of deposits of economic importance.

Polar Continental Shelf Project (PCSP) is the name given to an annually repeated effort on the part of an EMR unit to provide electronic position-finding, air transportation and supplies to Canadian and foreign scientists and surveyors exploring the northern Arctic, where the severe climatic and geographical conditions make it almost impossible for smaller field parties to operate on their own.

There are two base camps — at Tuktoyaktuk in the western Arctic, and at Resolute on Cornwallis Island in the eastern Arctic.

Although the PCSP is staffed and managed by the Department of Energy, Mines and Resources, the field parties that it supports frequently belong to other Canadian government and research agencies, and occasionally to scientific agencies outside Canada. The common criterion applied to all of the field surveys and investigations is that they should yield information useful to Canada. Hydrographic surveys of the Arctic seas and straits are one of the major efforts; geological and geophysical studies in aid of resource development and conservation account for another large share of air time and money. Each field season also sees investigations concerning the glaciology, biology, archaeology, and other phenomena as they apply to the northern Arctic.

The Canada Centre for Remote Sensing is the newest branch of the Department of Energy, Mines and Resources. It has been set up to supervise and co-ordinate airborne and satellite remote sensing in Canada, and to carry out or encourage research in remote-sensing technology and interpretation.

The sensors being used are mainly of two types: photographic cameras using a variety of special films, including infra-red; and line scanners that operate somewhat like television cameras and are mounted in an orbiting satellite. The Centre has at its disposal a fleet of four aircraft to respond to requests for remote-sensing surveys from federal, provincial and private research agencies. It has also entered into a contract with the US National Aeronautics and Space Administration (NASA) to receive imagery of Canadian territory from NASA satellites. The first of these satellites, the Earth Resources Technology Satellite A (ERTS-A) designed especially to scan the surface of the earth and to catalogue its resources, was launched in July 1972. It orbits the earth at an altitude of approximately 500 miles, the orbits shifting to follow the sun. LANDSAT-2, the second of the series, was launched January 19, 1975.

Canada converted a radar station a few miles outside Prince Albert, Sask., to receive satellite imagery from the ERTS-A satellite. In April 1976, a second satellite tracking station, located at Pouch Cove, Nfld., will extend satellite coverage to the Atlantic provinces and adjacent ocean areas.

Remote-sensing imagery is capable of giving a quick and — in the case of satellites — constantly updated overview of forest cover, snow cover and snow melting, movement of sea ice, the condition of ocean water, urbanization, land use, etc. It is a novel and exciting tool for those charged with planning the orderly development and conservation of Canada's resources.

9.2.6 Department of the Environment

9.2.6.1 Atmospheric research

The federal agency responsible for atmospheric research is the Atmospheric Environment Service (AES) of the Department of the Environment, concentrated in the Atmospheric Research Directorate. Capital, operating and maintenance funds for research and develop-

ment allotted to the Service for the year ended March 31, 1975, amounted to \$4.7 million. In this figure is included assistance, in the form of subventions in the field of atmospheric science, for research in Canadian universities amounting to \$254,000.

Atmospheric processes research. The activities of the Atmospheric Processes Research Branch are concentrated in three main areas. In the Numerical Studies Division emphasis is on numerical modelling of large scale atmospheric behaviour and on diagnostic studies of these processes from observations. Numerical models are being used or are under development to address the questions of the photochemical, dynamical, and climatic effects of stratospheric pollution due to SST exhaust products and from pollutants released at the surface such as freons; the simulation of the general circulation of the atmosphere and the impact of man's activities (such as increased carbon dioxide, global pollution, etc.); the determinants of climate and the impact of climate on natural and anthropogenic factors; and the possibility of extended predictive ability and of prediction of climatic anomalies and trends. Research into numerical methods of the solution of the equations involved, into the parameterization of physical processes for incorporation into the models, and into theoretical aspects of atmospheric behaviour, are an important part of the over-all program. Diagnostic studies of atmospheric behaviour are proceeding concurrently. In particular the delineation, quantification, and analysis of climatic trends in Canada and in North America is under way as a basis for physical understanding of the processes involved and for the possibilities of long-range prediction.

In the Experimental Studies Division observational studies of several important stratospheric constituents and parameters such as ozone, nitric oxide, nitrogen dioxide, nitric acid, water vapour, chlorine constituents, hydroxyl emissions and solar ultraviolet flux are under way. These measurements are carried out by remote sensing and in situ measurement via balloon, rocket and aircraft. Stratospheric measurements are used to establish the current "unperturbed" stratospheric photochemical balance, to verify photochemical reaction rates and as an input to models of stratospheric behaviour. These observations serve as a basis to estimate the effects of stratospheric pollution by SST exhausts, freons and other compounds. Additional physical observations are carried out to maintain international programs in ozone, radiation, noctilucent clouds, turbidity and aerosols. Other observational, experimental and design work is carried out to develop and organize the techniques required for continued monitoring of the stratosphere.

In the Cloud Physics Research Division experimental and theoretical studies are directed primarily toward developing techniques of weather modification to enhance rainfall and suppress damaging hail. Toward this end, microphysical measurements of cloud parameters made by instrumented aircraft are being used to delineate cloud structure, increase understanding of the physical processes and to assess cloud potential for weather modification. Weather radar studies are being conducted to better understand and measure the precipitation processes on the mesoscale. Atmospheric electricity studies accompany this activity to gain further insight into the electrical phenomena of the atmosphere, including lightning discharges. Numerical modelling studies of dynamical and physical cloud processes in three dimensions are being undertaken to provide the capability of simulating clouds by computer techniques for both diagnostic and forecast purposes.

Air quality research includes the development of an air pollution climatology for Canada, experimental plume-rise studies, urban and regional multiple source dispersion, wind-tunnel modelling, visibility trends in Canada and the development of air quality indexes, studies of the effects of pollution on climate and studies of urban meteorology. Important additions to the research programs in air quality are environmental impact studies for existing and proposed industrial sites. In the past year, these special short-term investigations have taken on great importance as a result of the growing public concern about the environmental impact of both industry and modification to established facilities and as a result of the growing realization of the importance of meteorological factors in determining the effects of pollutant emissions on air quality.

As part of a commitment to the World Meteorological Organization's global monitoring network, three baseline stations at remote arctic and oceanic sites are being established; eight regional stations are currently operational. In addition, a national network of urban reference stations, one for each large city, will be established over the next five years. The observational program will include not only the standard meteorological elements but also precision

measurements of the concentrations of various particulate and gaseous pollutants, the chemical constituents of precipitation, turbidity and the downward components of radiation. Special air pollution research networks will also be operated from time to time for testing physical and numerical models. In this connection, the co-operation of the provinces will be sought to exchange suitable data.

Work continued on improving the performance of the lysimeter. A successfully modified soil moisture control system was designed and installed. In order to operate the lysimeter in severe winter conditions, a device was developed and installed to prevent ice formation and snow accumulation in the gap between the lysimeter and the retaining wall. In a co-operative research program with the Ontario Ministry of Agriculture and Food in connection with frost protection of vineyards, frequency and strength of inversions at three sites in the Niagara Peninsula were continuously measured. Experiments were also conducted to bring down warm air from aloft using helicopters to stir the air at a height of about 75-100 ft. Work was carried out on evaporation from sunken and non-sunken class A pans to determine their energy components in order to arrive at the most important meteorological parameters for reduction of data to open water evaporation.

Hydrometeorological studies contribute to greater efficiency in the design and operation of dams, sewer systems and other water control structures; improved forecasting of lake and river levels, floods, water supply and irrigation requirements; and more efficient design and operation of hydro-electric power developments. Work continued on improving estimates of the distributions of precipitation, evapotranspiration and snowpack water content using surface instrumentation and remote sensing techniques. Progress was made in the development of mathematical models of water balances and energy balances involving meteorological data and hydrological applications. Efforts were directed to studying the effects of man on the hydrological cycle and the resultant spectrum of water-related environmental management problems. Much of this work was carried out in support of federal-provincial projects and the International Hydrological Decade.

Studies of atmospheric processes in the earth's atmosphere boundary layer, that layer of the atmosphere from the surface up to a few thousand feet, are of importance in such fields as agriculture, forestry, oceanography, weather forecasting, etc. Study topics include wind and turbulence in the surface boundary layer; turbulent fluxes of momentum, heat and moisture; radiation and surface energy balance; and temperature and humidity microstructure. A major program was carried out to investigate the interaction of the atmosphere and Lake Ontario by measuring the evaporation and heat flux from or onto the lake and the wind drag on the lake surface. A highly instrumented jet aircraft was used to extend the level of observations up to 1,000 ft and over the whole lake. The results will be useful in incorporating the lake effects into forecasting models.

Another major program was the Global Atmospheric Research Program (GARP) Atlantic Tropical Experiment (GATE). The main interest of this program is in developing dynamical and thermo-dynamical models of the tropical boundary layer. In particular, the interaction of the boundary layer with the cloud layer and larger phenomena will be studied.

Meteorological services research. A rapidly expanding program of applied research, including some more fundamental aspects where necessary, is grouped together in the Meteorological Services Research Branch in order to provide support for the expansion and improvement of forecast services of the AES. Centralized aspects of the forecast system, carried out at the Canadian Meteorological Centre, receive support through a program of research and development in numerical-dynamical weather prediction using a very large computer to simulate atmospheric behaviour. Improvements are being made based on advances in dynamic, computational and occasionally quasi-empirical techniques. International effort in this area is being strongly influenced by the Canadian program.

Research and development to improve and automate the regional and local operations of the forecasting system are being intensively pursued. New forecasting operations are being investigated, including systems for predicting air pollution potential, ice in navigable waters, forest fire hazards, avalanches and wind-waves. A comprehensive environmental prediction system in support of oil drilling in the Beaufort Sea is being developed and will include prediction of ice masses and ice floes, weather elements and sea-state.

Observational systems and data problems relating to improvement of the forecast system are continually being studied and evaluated. The work in this area touches on many basic questions that the Service must answer which means that a high degree of co-ordinated effort is necessary. For example, in one area, remote sensing satellite meteorology will have a very strong impact on the whole question of the quality and make-up of the atmospheric data base which, in turn, is related directly to the efficiency and effectiveness of the forecasting system.

Meteorological applications. The AES provides consultation, advice and information on the effects of weather and climate on a wide range of activities such as water resource management, agriculture, forestry, transportation, communications, industry, construction, air pollution control, aviation, tourism and recreation. The hydrometeorology and marine applications component is involved in the application of meteorology to the solution of problems of both the fresh and salt water environment. Analyses and studies are undertaken for the efficient design and operation of dams, power developments, storm sewers and other hydrologic structures, and for improved forecasting of lake levels, river flows and floods. Increased attention has been given to techniques for improving storm surge forecasting and to wind-wave climatologies required by both the shipping and oil drilling industries. Many of the programs are co-operative, interdisciplinary and interagency in nature; some are international and others are federal-provincial in character.

Climatic analyses and studies in support of natural resources, arctic exploration and development, industry and commerce are conducted within the Service itself, by the assignment of personnel to other agencies, through co-operative programs, or through contracts. Arctic studies are made in support of oil and mineral exploration, pipeline construction, the selection of airports, town and mining sites, the design and operation of communication systems, transportation and operations in severe cold weather. Topo-climatological studies, using mobile and stationary sensors, are a basis for optimum land use and town planning; engineering studies are undertaken in support of the construction industry and analyses are used in the National Building Code; and ice accretion climatology and wind loading problems are studied to aid in transmission design.

Instrument research and development. The gathering of quantitative atmospheric data is a basic requirement for knowledge of the past and present, and prediction of the future weather. To accomplish this, instrumental measurements of the atmospheric variables are taken at 2,500 representative surface locations in Canada and the vertical structure of the atmosphere is probed to 100,000 ft at a network of 38 stations by means of rawinsonde balloon ascents. In all, approximately 55 different types of instruments and instrument systems are used in operational measurements and a number of other types in specialized investigations. Continuing research and development are directed at improving existing measurements as well as in testing instruments to meet new needs. Some of the more noticeable areas where effort is expended are described here.

A new second generation automatic weather station is currently being installed at various locations throughout Canada. These computer-interfaced stations represent a breakthrough in the processing of observational data. The station reports observations directly into a central computer which processes the data. The data are then coded and distributed on the national teletype system. These observations and reports are comparable to observations from existing sources.

The development of ancillary processing equipment for use with weather radar is well advanced. The equipment under test involves a system controlled by a mini-computer which accepts the input from a C-Band weather radar. This radar is programmed to scan a horizontal volume of air of approximately 10,000 sq miles in area centred on the station to a depth of 30,000 ft above the surface. The computer sorts out the returns from the radar and issues a quantitative cross-sectional map of precipitation intensity of four levels from 5,000 to 30,000 ft superimposed on an area map. This information may be transmitted by telephone circuits for the information of a variety of users such as weather forecasters. To supplement data from manned C-Band radar sites, a new Radar Remote Output Monitoring System (RROMS) is being developed and tested. This system will be designed to supply on a paper chart a simple graphic representation of weather conditions observed by the scanning radar.

Experimental prototypes of an acoustic radar have been successfully tested and further development toward operational equipment is started. This equipment, termed SODAR, transmits a pulse of acoustic energy upward and the sonic backscatter from small temperature irregularities in the atmosphere is detected and graphically depicted. The ultimate use which is visualized for this equipment is to provide a continuous indication of the stability structure of the lower levels of the atmosphere for possible use in the control and prediction of atmospheric pollution accumulation.

A number of types of optical scatter instruments are being evaluated under operational conditions as automatic station sensors for meteorological visibility for all types of observants. One type has been recommended for use in current applications. The handling of large quantities of data quickly is only feasible by means of computers. Investigations are under way to determine the techniques involved in moving the sensor outputs directly and automatically into the computer, thus eliminating the present intermediate handling and processing steps which may involve manual operations or complex analogue devices.

9.2.6.2 Forestry research

The responsibility of the federal government for forestry research and development is defined and established by the Forestry Development and Research Act (1966) and the Department of the Environment Act (1970). The primary federal organization concerned with forestry is the Canadian Forestry Service of the Department of the Environment. Within the Canadian Forestry Service there are six regional forest research centres, four forest research institutes, two forest products laboratories and one independently operating forest experiment station. Collectively, these establishments undertake research and operations either on a regional or a national basis.

Essentially, the program of the Canadian Forestry Service is concerned with research and development related to systems of forest management, forest protection, and forest utilization as well as to the use of forest products. Within this framework, the present trend is to place less weight on research concerned with production forestry and more emphasis on environmental and amenity forestry studies. This situation is a response to a recognized need for Canada's forests to provide and safeguard values additional to the traditional ones of wood and fibre. It constitutes acceptance of the principle of integrated resource management whereby such important matters as water, wildlife, and recreation become part of over-all long range forestry plans.

Production forestry research. In this broad area of research, current objectives include the matter of establishing trees in the most efficient manner. This covers methods of producing tree seeds and seedlings as well as ways of reforestation or afforestation land and upgrading the genetic quality of planting stock. Another important area is related to managing the forest to achieve optimum growth and quality. Closely associated with this is the matter of research and forecasting activities to prevent, detect, and control insect and disease outbreaks as well as forest fires.

Considerable emphasis is placed on improving and demonstrating practical means of reducing the costs of harvesting and transporting the forest crop because a large part of the final value of wood products relates to costs which have accumulated by the time the logs reach the mill. In this area it is noteworthy that, in 1974, the Forest Engineering Research Institute of Canada — Institut Canadien de Recherches en Genie Forestier was incorporated to carry out research and development work in the areas of harvesting and transportation of wood. The Institute has brought together elements of logging research activity formerly located within the Canadian Forestry Service and the Pulp and Paper Institute of Canada. Its operations are jointly financed by the federal government and forest industry companies.

Greater efficiency in the utilization of the forest resource is a matter of current concern. In this area there is involvement with methods of processing under-utilized trees, improving mechanical processing of wood, evaluating log quality, improving gluing methods, and determining the paper making qualities of various tree species as well as parts of trees currently unused. Concern over the rate of depletion of certain non-renewable resources has prompted a greater interest in applications for wood and considerable work is in progress on new and improved wood products. This is largely confined to the forest product laboratories located in

Vancouver and Ottawa. It covers such aspects as wood protection, the use of wood in construction, testing wood and paperboard products, and methods of using reconstituted or composite wood products. Attention is also given to developing management systems for specific forest environments to optimize production of wood as well as other goods and services.

Environmental and amenity forestry research. In this category attention is being paid to research aimed at abating pollution of water and air caused by forest products industries. To help finance research directed specifically toward the reduction of water and air pollution caused by pulp and paper operations, the federal government has established the Cooperative Pollution Abatement Research (CPAR) program which provides up to \$1.2 million in funds annually. Authorized in 1970, this program is administered by the Canadian Forestry Service. The development and promotion of forestry techniques aimed at rehabilitating land despoiled by strip mining or environmental disasters is also receiving attention.

Trees in the urban environment are a matter of current concern. This relates to such objectives as breeding trees specifically for urban use; the promotion of green belts; and solving tree problems, such as Dutch elm disease, which have a major impact in eastern urban areas. The monitoring of forestry practices to determine both their environmental and social impact is an important phase of work. This encompasses such matters as the side effects of pesticides, herbicides, and fertilizers; the effects of clear-cutting; the implications of site preparation practices; and problems associated with the monoculture of tree species. Forest and plant ecology studies to expand knowledge and understanding of managed and natural forest ecosystems are receiving attention. The response of such ecosystems to stresses of various origin is of particular importance. This work is closely related to management methods developed for amenity forests where commercial harvesting is not a primary goal. It involves such matters as manipulating forests for optimum water yield, recreational opportunities, game, and fish.

Other activities. The Canadian Forestry Service also seeks to develop the type of information which will result in the formulation of improved government and private policies and programs bearing on the forestry sector. Research aimed at accumulating basic knowledge on a wide variety of forestry and tree topics ranges from such aspects as taxonomic research to the relationships of fundamental meteorological processes to trees and forests.

In the operational area, the Service is concerned with such matters as the country-wide forest insect and disease survey, forestry services for other federal government departments, and environmental impact assessments for major projects such as the James Bay Development in Quebec and the Mackenzie River pipeline in the North. The Service has responsibility for effective communication with the international forestry community as well as fulfilling Canada's international forestry commitments. Finally, the efficient, rational use of the forest resource is promoted by technical extension and liaison services. By its program of public information, involving publications, films, interviews, etc., the Service also seeks to establish public awareness and understanding of the forest environment.

9.2.6.3 Fisheries and marine research

Programs of fisheries research directly supporting national and international fisheries activities are conducted from research stations of the Fisheries and Marine Service in coastal and inland areas across Canada. These programs are designed to add to fundamental knowledge of Canada's vast living marine and freshwater resources. Included are life history, population and behaviour studies leading to a sound scientific basis for the conservation and management of the commercially important fisheries including those for lobster, crabs, shrimps, oysters, scallops, clams, marine mammals, salmon, cod, herring and halibut, as well as some marine plants, such as phytoplankton and seaweeds. Also included are studies on fish and shellfish diseases and fish predators, and research on fish genetics, physiology and behaviour, the latter with a view to improving fish culture and farming methods and fish farm and hatchery stocks. In addition to these basic studies, new fishing grounds and new species for exploitation are sought and experiments in improving fishing methods are undertaken.

On the Atlantic Coast this work is conducted out of research stations in St. Andrews, NB, Dartmouth, NS, and St. John's, Nfld.; work on arctic fisheries and on sea mammals is directed

from a laboratory in Sainte-Anne-de-Bellevue, Que.; freshwater work is carried out from the Freshwater Institute in Winnipeg, Man.; and work on the Pacific Coast is directed from research laboratories in West Vancouver and Nanaimo, BC. Research vessels used for biological studies vary from small in-shore and lake craft to specially built seagoing ships.

The aquatic environment program studies the marine and freshwater environment in which aquatic organisms live, in order to increase knowledge in primary and secondary productivity and the occurrence of ocean and freshwater life of importance to man. Considerable importance is placed on increased research efforts associated with pollution prediction, abatement and elimination, including the effects of freshwater and marine eutrophication. Investigations are also conducted into the distribution and physical and chemical characteristics of major ocean currents and the physical and biological structures of large ocean areas, including the ocean bottom, where concentrations of fish and other aquatic life occur. Ocean climate and ocean weather as they affect the distribution of fish and other living organisms, as well as the vertical and horizontal distribution of nutrient matter and the cycle of energy and life in the seas, are regularly observed and correlated. These studies, as well as special studies of interest to the Armed Forces, the Ministry of Transport and the international fishery commissions, are carried out by groups operating from Dartmouth, NS; Winnipeg, Man.; Burlington, Ont.; West Vancouver and Victoria, BC; and with the co-operation of the Department of Energy, Mines and Resources.

Investigations aimed at improving methods of fisheries resource utilization including preserving, processing, storing and distributing fish products, as well as of utilizing all parts of the fish are carried out. These include developments in refrigeration, the use of antibiotics as fish preservatives, development of new products for the utilization of abundant species not now used for food, and improvements in canning, smoking and salting of fish. Fundamental research on the structure and composition of fish proteins, marine oils, hormones from aquatic organisms, and other products from the sea is under way. These studies are carried out in research laboratories at Halifax, NS, and St. John's, Nfld. on the Atlantic Coast; at Vancouver, BC, on the Pacific Coast; and for inland products and processing at Winnipeg, Man.

Co-ordination and integration of the various research programs is carried out by a research and development programming group in Ottawa, who are also responsible for the administration of a grant program to encourage university research in the fields of marine and aquatic science. A unit for the editing and production of scientific publications is also centred in Ottawa.

The Fisheries Research Board of Canada is an independent advisory body reporting directly to the Minister of State for Fisheries. Its task is to analyze the research and development programs of the Fisheries and Marine Service and to make recommendations as to changes or amended priorities as deemed necessary. The Board consists of a permanent chairman and up to 18 members appointed by the Minister for five-year terms.

9.2.7 Department of Indian Affairs and Northern Development

The Department of Indian Affairs and Northern Development has two distinct but quite different responsibilities toward research. In one the scientific effort supports departmental policies, plans and administrative activities; while the other is to foster, through scientific investigation and technology, knowledge of the Canadian North and of the means of dealing with conditions relative to its future development.

9.2.7.1 Indian and Eskimo Affairs

The Research Division, Policy Planning and Research Branch, engages in two main types of research: social research and historical research. As well, it provides funds to Indian associations and organizations engaged in carrying out treaty and historical research as part of the claims development process. Finally, the Division operates a Research Reference Service which acts as a central repository for material on Indian people to facilitate research carried out by others.

One group within the Research Division is responsible for carrying out social research as required in the policy development process. In addition, this group handles special projects at the request of other branches. During the past year work has centred on an analysis of legislation pertaining to Indian people and with the question of off-reserve Indian people and

the factors involved with it, namely, migration, relocation projects, training centres such as the one at Rivers, Man., and the problems of adaptation to urban residence. Currently an inventory of off-reserve Indian people is being carried out as well as work on the sociological portion of a socio-economic study of Northern Saskatchewan fisheries. A major extra-divisional project was the determination, by community self-survey, of the location and community plan of the new reserve for the Waswanipi Band.

Research into questions of treaty and historical and aboriginal rights is carried out mainly in the Treaties and Historical Research Centre of the Research Division. In addition a contract was let for an examination of the problem of compensation for loss of the use of lands. Research into hunting, fishing and trapping rights, however, is being carried out by an officer seconded from another branch. The Centre operates mainly to facilitate the research efforts of the Indian associations and organizations.

The treaty and aboriginal rights research funding group allocates a budget of \$2.5 million among the various Indian associations and organizations to assist them in conducting research necessary for the development and negotiation of claims. Most of the research data will enter the public domain once the claims are settled. This funding is to cease March 31, 1976.

9.2.7.2 Northern Affairs Program

Northern Policy and Program Planning Branch. The Northern Policy and Program Planning Branch facilitates, co-ordinates and implements northern policy objectives in concert with the Advisory Committee on Northern Development (ACND); conducts policy and planning development; analyzes and evaluates all northern programs in relation to the attainment of the northern objectives; administers incentive programs for resource development, and provides for roads and airstrips in the territories.

In the context of these activities, some scientific research in both the natural and the human sciences is conducted from time to time; the studies conducted or commissioned during 1974 include the following: studies of income and income distribution in the North; measurement of the value of economic activity in the North; studies on monitoring socio-economic change and an approach to social reporting in the North; a study of the resources of the Mackenzie Delta.

A major research program in the environmental and social sciences on the impact of northern pipelines, in particular in the Mackenzie Valley, was conducted during 1974. This was an interdepartmental effort conducted and co-ordinated by an Environmental-Social Program, Northern Pipelines group in the Department, under the aegis of the Task Force on Northern Oil, of which DIAND is a member. The study comprised a wide range of research and is reported on in other sections of this Chapter by the departments and agencies involved.

Territorial and Social Development Branch. The research activities of the Northern Research Division of this Branch can be divided into three major areas, namely, Social Research, Grants, and Arctic Laboratories.

The central responsibility of the Northern Research Division is to sponsor and conduct research into social problems in the North, in support of the Department's northern social programs, and in accordance with the guidelines for social improvement set down in the government's northern policy statement for the seventies. In 1974, emphasis was placed on problems of social change for native people in the North, and in particular on the social impact of large-scale resource developments. Research is either done in-house by the Division's small specialized staff of social scientists, or under contract by outside specialists whose work is co-ordinated by the Division. Major social research projects undertaken or sponsored by the Division in 1974 were: problems of modernization for native people in the eastern Arctic; social deviance at Frobisher Bay; a broad study into the employment-related preferences and aspirations of Yukon natives; implications of pipeline development for community organizations; social-psychological study of the effects of induced change on native peoples; and social impact on the Old Crow settlement of the Porcupine Route vis-à-vis the coastal route for a pipeline.

The Grants Program includes training grants and specified grants. In accordance with the Minister's responsibility for fostering northern research, included in the Act establishing the Department, the Division administers a program for training grants to universities which is designed to encourage the training of scientists in northern research in order to maintain a

nucleus of scientists interested in northern matters. In 1974, about \$300,000 was granted to 14 Institutes and Committees for Northern Studies at 14 Canadian universities. The studies supported covered most disciplines. The specified grants program, which serves the same ministerial responsibility as the research training grants program, is designed to encourage research into specified northern problems identified by the Department. As in the case of the training grants, these grants are made to institutions and not to individuals. A Departmental Committee evaluates research proposals for this program and in 1974 about \$100,000 in specified grants was awarded by the Committee. Among the projects supported by this program in 1974 were: an analysis of the teaching and research programs sponsored by Canadian universities in the North; a study of the principal factors affecting diver performance under arctic conditions; a study of problems of demography and human ecology in the North; and a project to assist the Eskimo community of Nain, Labrador, in defining and responding to problems of social change; and a study of the effects of television on northern children.

As part of the Minister's responsibility for fostering research in the North, the Division also operates a general purpose scientific laboratory in Inuvik, NWT, to support a variety of research projects in the Mackenzie Delta area. The laboratory, opened in 1963, includes a cosmic-ray measurement annex, low-temperature rooms, photographic dark room, library seminar room, offices and general or support laboratories. In 1974, the laboratory supported about 400 investigators and 300 scientific projects undertaken by government, universities and industry. In response to the need for similar facilities elsewhere in the Arctic, the Division began construction of an eastern Arctic laboratory in Igloolik, NWT, in 1973; much of the construction was completed in 1974. The laboratory, which will serve the Foxe Basin area, is located on the coast, an area of geographical, climatic and topographical diversity, and in an area where renewable resources are exceptionally rich. The laboratory will be opened in the summer of 1975. During 1974, preliminary planning took place for the construction of a third Arctic laboratory in Whitehorse to serve the Yukon area.

Northern Natural Resources and Environment Branch. The Arctic Lands Use Research Program (ALUR) of the Water, Lands, Forests and Environment Division is intended to provide research support for the Department's management of northern resources. The 1974-75 program was largely a continuation or conclusion of work begun in previous years. There were four major areas of work and a number of smaller topics.

The first major area is the Land Use Information Mapping Series. These maps, which are at a scale of 1:250,000, are compiled for ALUR by the Lands Directorate, Department of the Environment and summarize the most recent, available information on renewable resources and related human activities. Maps have previously been published for the Mackenzie River Valley and part of the Yukon Territory. In 1974-75 a further 17 map sheets were published to complete coverage of the Yukon. Also, field work and literature reviews were completed for 24 map sheets in the western portion of the Mackenzie District, NWT, and these sheets will be published in the summer of 1975.

A second major mapping project is the production of photomosaics depicting the sensitivity of terrain to disturbance. The mosaics are at a scale of 1:60,000 and are based on photo-interpretation of surface materials, ground ice conditions, bedrock, local topography and erosion. Mosaics for Bathurst Island and adjacent islands, Eglinton Island, southwest Ellesmere Island, west Melville Island and Prince Patrick Island were completed in 1974-75. Complementary, more detailed field studies of terrain disturbance are being carried out on the Fosheim Peninsula of Ellesmere Island and on King Christian Island. At the former site a predictive, micro-meteorological model of disturbance effects is being developed.

A third major group of studies is concerned with fire ecology, particularly plant succession following burning on the tundra, in the taiga and in the northern boreal forest zones. Studies to elucidate fire recurrence intervals, to identify fire-prone localities and the relationships between lightning-caused fires and weather patterns of air mass movement are under way in the Mackenzie Valley and the Caribou Range.

The fourth major group of projects is a study of land-based oil spills — their spread and behaviour, their effects on plants, on soil micro-organisms, and on aquatic plants and microfauna when the oil flows into waterbodies. Both field and laboratory studies are in progress. The work was undertaken on behalf of the Environmental-Social Program, Northern

Pipelines and most of the study was completed in 1974-75. It will be continued at a monitoring level to determine long-term effects.

Mine wastes from the Yellowknife gold mines are being studied to elucidate their toxicity and to devise ways of removing arsenic from waste waters. In the Yukon, a study is in progress to determine why water seeping from a tailings pond is alkaline although the pond is constructed of highly acidic rock (pyrites).

A preliminary archaeological survey and studies on waste disposal which were begun under the Environmental-Social Program, Northern Pipelines, in 1972-73 have been concluded.

Oil and Minerals Branch. The Exploration and Geological Services Unit of the Mining Section provides a geological information and advisory service to those engaged in the mineral industry in the Yukon and Northwest Territories. Resident geologists' offices are maintained in Whitehorse, YT, and Yellowknife, NWT. Two new core libraries were officially opened in 1973. These contain laboratory facilities for core splitting, diamond saw cutting and thin section preparation, as well as core storage facilities to provide a means of preserving valuable core data for the mineral industry.

Resident and district geologists carry out mineral property examinations, collect rocks and mineral specimens and advise the mineral industry, government departments and research scientists on geological problems arising from their work in the territories. The service includes carrying out geological evaluations on mining developments in the Yukon and Northwest Territories, where government assistance is solicited, such as for the Prospectors' Assistance Program and the Northern Mineral Exploration Assistance Program.

A library of released technical assessment reports is available for reading and copying by means of a microfilm system. A small library of technical books and mining publications is maintained also for public convenience in Whitehorse and Yellowknife.

9.2.7.3 Parks Canada

Research conducted by Parks Canada is applied primarily to the selection, acquisition, preservation and development of representative and significant examples of Canada's natural and historic heritage in the form of National Parks, National Historic Parks and Sites and historic canals, waterways and land routes. Other benefits from this work are derived indirectly by universities, other agencies and levels of government and interested public sectors of the natural and historic scientific community.

National Parks. Primary research programs currently being conducted by Parks Canada relate to the selection, planning, development and operations of the National Parks and include: the preparation of Resource Inventories of each park as a basis for resource management and development planning; applied research to provide data for environmental effects assessments; and applied research required as a guide to new park planning.

The development of National Parks Resource Inventories comprises three stages: the preparation of bibliographical synthesis and evaluation of existing information to plan the inventory and set priorities for collecting missing data; setting of bio-physical classifications to divide the park into types and levels of study, followed by the examination and collection of data on the physical elements (climate, geology, geomorphology, etc.), the biological surroundings (vegetation, wildlife, etc.) and references to the human history of the area; and assembling and correlation of data, and synthesis into maps and descriptions as usable forms for park planning and management.

Resource Inventory maps are currently in the final stages of preparation for Point Pelee, Kejimikujik and Waterton Lakes national parks. Data and other related information obtained from these studies form the basis of environmental effects assessments for major construction projects and the effects of large numbers of visitors to the parks.

Natural history and region research studies are conducted to identify natural areas of significance in the national character of Canada's landscape worthy of selection and designation as National Parks. For this purpose Canada is divided into 39 territorial and nine marine regions, each with a defined and distinct natural history characteristic. To date, five natural regions are well represented by the existing National Parks, 19 are partially represented, leaving 24 unrepresented.

National Historic Parks and Sites. Archaeological, historical and architectural research is conducted by the National Historic Parks and Sites Branch for the purpose of the selection, development and interpretation of the National Historic Parks and Sites; and the operation of the nation-wide Canadian Inventory of Historic Buildings. Selected monographs resulting from the research work are published in two forms, *Canadian Historic Sites: Occasional Papers in Archaeology and History*, and *History and Archaeology*, both available for purchase at Information Canada bookstores. In addition, *Manuscript Reports*, a collection of unpublished research papers, has been deposited with the Public Archives of Canada and the provincial archives for consultation there by the public.

Depending on the requirements for each site development project, historians use documentary sources to produce narrative histories of the sites, structural and occupancy histories of individual buildings being restored, "storylines" for interpretation centres and displays, and background studies to place the sites concerned in the context of Canadian history. The work involves research in national, provincial and local archives and, where applicable, foreign archives as well. It also involves close liaison with related professionals such as archaeologists, architectural researchers, restoration architects, museologists and planners.

During the past two years historical research has been concentrated most intensively on large site development projects at Dawson City, Lower Fort Garry (Manitoba), Artillery Park (Quebec City), Les Forges du St-Maurice (near Trois-Rivières), the Rideau and Chambly canals, and the Niagara historic complex (Fort George, Queenston Heights, Fort Mississauga, Butler's Barracks). In addition, staff carried out historical research for individual smaller projects at Province House (Charlottetown), Fort Walsh, Sask., and Fort St. James, BC; and produced detailed thematic studies on the history of Canadian canals, the fur trade in eastern Canada, the evolution of Canadian lighthouses, and the history of transportation in the Yukon. Research on the Fortress of Louisbourg, NS, begun in 1961, continues.

Historical and archaeological research is carried out at a site: to determine the nature of sub-surface cultural remains for an assessment of the potential for stabilization, restoration or reconstruction of historical buildings; to obtain information on the history of occupation at a particular historical site for park interpretation and to shed more light generally on various aspects of Canadian history with an end objective of achieving a proper balance in the interpretation of Canada's past to the public through the National Historic Parks (NHP) system.

Major excavation projects continued for a second season at the following national historic parks and sites: L'Anse aux Meadows, Nfld., a Norse site dating to 1000 AD; continuation of work at the Fortress of Louisbourg, NS, which began in 1961 and will continue for the next few years; a second season of major excavations at Les Forges du St-Maurice near Trois-Rivières, Que.; a second season at Parc d'Artillerie in Quebec City; the final season of excavations at Fort George, Niagara-on-the-Lake, Ont.; an initial excavation at Fort St. Joseph, Ont., which will continue for the next two to three years; and a second season in a three to four year project at Fort Walsh, Sask.

The second season of extensive surveys to locate historically significant shipwrecks was carried out in Nova Scotia, New Brunswick and Quebec during the summer of 1974. Meanwhile, the study continues of the extensive material excavated from the 18th century French vessel *Machault*.

The Canadian Inventory of Historic Buildings (CIHB), is a unique computer-based survey designed to locate the surviving historic buildings throughout Canada and to provide data to the Historic Sites and Monuments Board of Canada on the significance of a building or group of buildings, and to enable a comparison with all others of similar style and value in Canada. The Inventory also serves as a source of basic data for architectural and social historians as well as an information bank for urban planners, preservationists, and other groups or individuals interested in our architectural heritage.

The CIHB program is carried out in three phases: Phase I records the exteriors of buildings on a form comprised of a series of detailed drawings covering all facets of exterior design used in Canadian structures, all numerically coded for computer input. Buildings are selected by date only, and the present historical boundary for the Inventory is 1880 for eastern Canada and 1914 for western Canada, the Yukon, and the Northwest Territories. By the end of 1974, approximately 145,000 buildings had been recorded under the Phase I program which began in

June 1970. Phase II involves a selection of buildings screened from Phase I; interiors are recorded in considerable detail and the information is coded and computerized. Approximately 1,000 buildings have been recorded since work on these two phases began in 1972.

Socio-economic research. The Canadian Outdoor Recreation Demand (CORD) Study began in 1967, and officially ended in 1974. The study resulted in a number of research projects which have been reported in social science journals. Three volumes are to be published, one documenting the data collection efforts of the CORD Study, one containing the CORD Study Technical Notes and discussion of these notes and the third a technical note volume covering 42 CORD Study Technical Notes presented under the following general headings: destination models, attractiveness analysis, origin models, supply analysis, theory articles, survey methods-analysis methodology, allocation and evaluation modelling, and trend analysis and projection analysis.

Park use research in Parks Canada has been concentrated on evaluation of its post data collection and on analysis of the data collected in its 1971-73 cycle of data accumulation. Both analysis methodology papers and information dissemination publications are the output of the "evaluation analysis" year. Scrutiny of research methodology is being encouraged by the presentation of papers at professional meetings and the circulation of papers for review by professionals outside Parks Canada and for publication in scientific journals. Also, data and research ideas are being provided to Canadian universities to encourage the increased analysis and critique of data collected by Parks Canada.

9.2.8 Department of Industry, Trade and Commerce

The results of research, development and advanced technology are regarded by the Department of Industry, Trade and Commerce as a major resource essential to the achievement of efficient and sustained growth in the production and trade of Canadian goods and services. As tariff barriers are lowered and industrialized countries attempt to upgrade as much of their raw material as possible, technological innovation will play a key role in economic growth. Emphasis is thus placed on the level, distribution and quality of the national effort directed to the advancement and application of science and technology. A major function of the Department is to promote and assist product and process development and to increase productivity in Canadian industry through the greater use of research and the application of advanced technology. The Department achieves these objectives mainly through the use of financial assistance programs.

The Industrial Research and Development Incentives Act (RSC 1970 c.I-10) provides a general incentive for scientific research and development. Its objective is to induce Canadian corporations to undertake additional research and development likely to result in economic benefit to Canada through the eventual production of new and improved products and processes for sale in domestic and foreign markets. Any taxable Canadian corporation carrying on business in Canada may apply for a grant which is based on the corporation's expenditures for scientific research and development carried out in Canada. Since the inception of the program in 1967, some \$168 million has been authorized for payment to Canadian corporations for scientific research and development performed in Canada. Of this amount \$30.1 million was authorized for payment during the year ended March 31, 1974.

Financial assistance for selected projects to develop new or improved products and processes which incorporate new technology and which offer good prospects for commercial exploitation in domestic and foreign markets is provided under the Program for the Advancement of Industrial Technology (PAIT). The basic aim of this program, established in 1965, is to help Canadian industry upgrade its technology and expand its innovative activity by sharing with industrial firms the cost of specific product or process development projects involving a significant technological advance. In 1971 the program was expanded to provide support for market research and pre-production activities. Applications for PAIT assistance are appraised as to the technical and commercial feasibility of the project, the capabilities of the company to carry it out, and the project's potential contribution to the economic growth of Canada. Projects which have been supported under the program include development of small and large aircraft, communications equipment, electromagnetic prospecting equipment, safety

devices, advanced machinery and machine tools, wood-harvesting equipment, and environment protection devices. From the inception of the program in 1965 to March 31, 1974, \$214.1 million has been approved to support 778 development projects.

In order to remain internationally competitive, Canada's defence industry must keep pace with product developments and advances in manufacturing technology dictated by the requirements of modern military equipment. The Defence Industry Productivity (DIP) Program is designed to enhance the technological competence of the Canadian defence industry by providing financial assistance to industrial firms for the development of military equipment. Emphasis is placed on those areas of defence technology having civil export sales potential. Support is also provided for the acquisition of modern machine tools or other advanced manufacturing equipment to meet exacting military standards, as well as pre-production expenses to establish manufacturing sources in Canada for export markets.

Projects initiated under the DIP Program have been instrumental in helping industry to develop its skills on a specialized basis in fields of technology that have defence and civil applications and which Canada is favourably situated to exploit. Costs of these projects are shared by the Department and the Canadian firm concerned and, in some instances, by the governments of other countries. Among the projects that have received assistance are communications and aircraft navigation systems, gas turbine engines for aircraft, flight safety and simulation equipment, and information display facilities. Exports of the products of these developments continue to increase, including significant orders for such diverse applications as commercial airlines, public communications networks and television distribution systems. Since the inception of the Program in 1959, more than 740 projects involving a contribution of some \$424 million have been supported.

The Department administers three other programs which are designed to help Canadian firms, in particular small firms, to keep abreast of technological advances and thus maintain a competitive position in world markets. The Centres of Advanced Technology Program provides funds to universities and other organizations to assist with the establishment and operation of centres of expertise in specific fields. Eight centres have been established: The Canadian Institute of Metalworking at McMaster University, the Centre for Powder Metallurgy at Ontario Research Foundation, the Systems Building Centre at the University of Toronto, the Systems Analysis, Control and Design Activity at the University of Western Ontario, the Centre for Ocean Engineering at the British Columbia Research Council, the Centre for Ocean Technology at the Nova Scotia Research Foundation, the Canadian Food Products Development Centre at the Manitoba Research Council, and the Environmental Technology Centre (Centre de Technologie de l'Environnement) at the University of Sherbrooke. The Industrial Research Institute Program assists universities to provide research and other scientific services to industrial firms. In this way expert technical assistance is available to those firms that do not maintain research and development facilities of their own, other firms can benefit from specific expertise without expanding their R&D facilities, and in general a closer relationship between universities and industry is encouraged. Institutes have been formed at the University of Windsor, McMaster University, the University of Waterloo, the Nova Scotia Technical College, McGill University, École Polytechnique, Ryerson Polytechnical Institute, the University of Alberta and the University of Quebec at Montreal. The Industrial Research Association Program encourages industrial firms to co-operate in supporting research and development work and related scientific activities such as technical information, technical advice, analysis and testing. Three research associations have been assisted under the program: the Canadian Welding Development Institute, the Canadian Gas Research Institute and the Sulphur Development Institute of Canada.

The Department is actively engaged in scientific and technological exchanges with foreign countries for the purpose of stimulating innovation in Canada, promoting industrial development through licensing arrangements, encouraging joint research and development projects in specific areas of technology, and developing markets for Canadian technological products. To facilitate such exchanges, bilateral science and technological agreements have been signed with Belgium, the Soviet Union and the Federal Republic of Germany, which provide for annual consultations and review of activities. The Department also participates in the activities of international organizations which are concerned with the industrial application of science and technology.

9.2.9 Department of National Defence

The Department's research activities are carried out for the most part under the Chief of Research and Development Branch. Projects are varied and often have important applications in other areas as well as for defence. The present emphasis is on projects relating to the defence of Canada's frontiers, especially the North, including such problems as the adaptation of men and machines to extreme cold. Testing and standardization activities are conducted by this Branch but also other branches within DND.

The Defence Research Board advises the Minister of National Defence on all matters relating to scientific, technological and other research and development, affecting national defence. At present, the Board consists of the Chairman, Vice-chairman and 14 members drawn from the Department of National Defence, the National Research Council, universities, industry and other research interests. The Board's University Grants Program, with estimated expenditures of \$3 million in 1974-75, supports research in areas relevant to defence. The Program has three main objectives: to acquire new scientific knowledge to assist in the solution of technical defence problems; to develop and support a defence research capability in the scientific community; and to produce promising young scientists to work in the defence establishment. Grants are awarded on the basis of scientific quality and the relevance of the proposed project to defence needs. Projects are supported in such fields as engineering and technology, atmospheric sciences, biological sciences, chemistry, mathematics, medical sciences, oceanography, physics and solid state earth sciences. In addition the Defence Research Board advises and administers the Defence Industrial Research program which in 1974-75 is estimated at \$4.5 million.

9.2.10 Department of National Health and Welfare

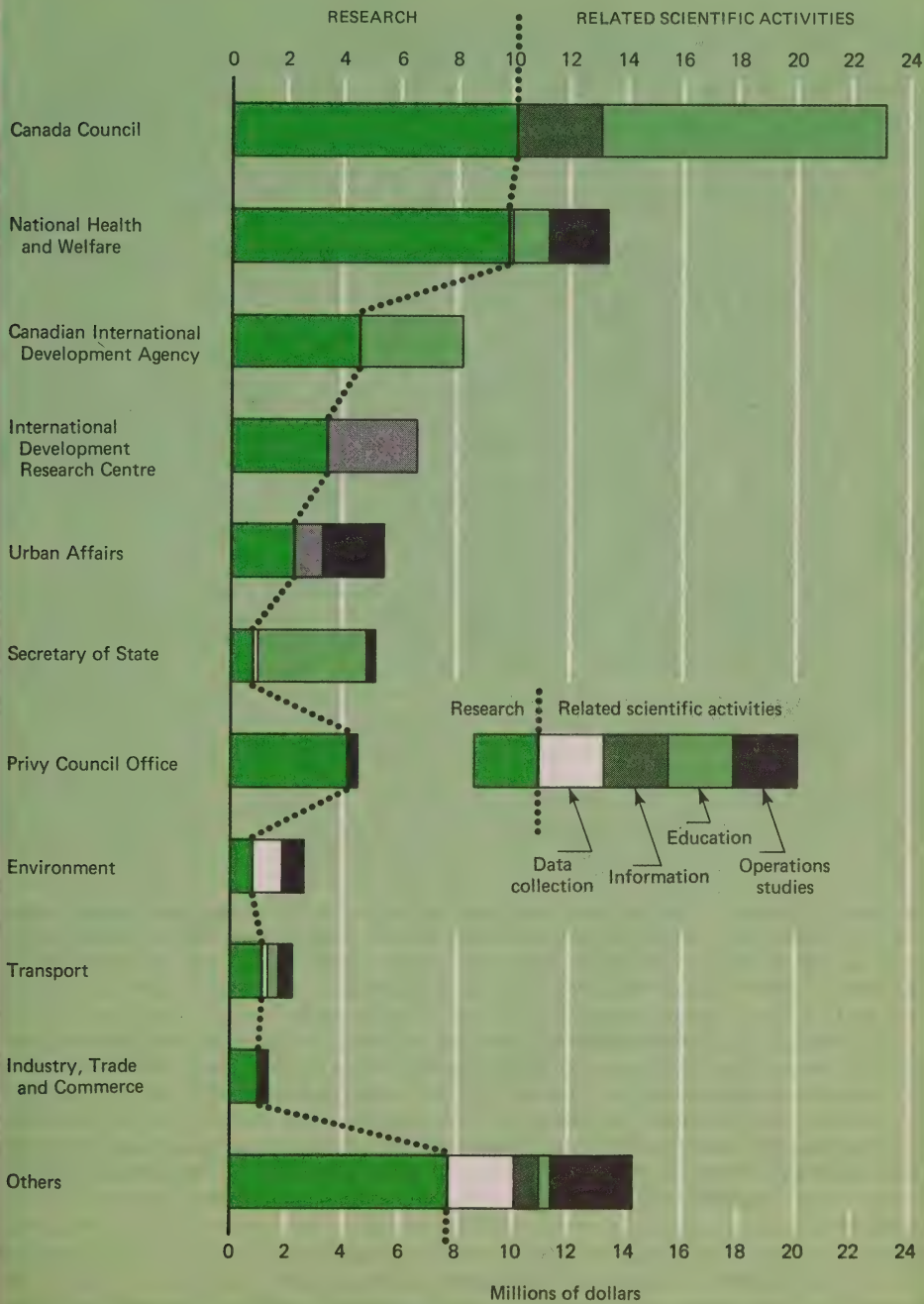
Following the amalgamation in 1973 of the National Health Grant and the Public Health Research Grant, the enlarged contributions and awards program was in 1974 redesignated the National Health Research and Development Program (NHRDP). New terms of reference for the NHRDP were drawn up to reflect current health research interests of the Department of National Health and Welfare. Health research projects, studies, demonstrations, and other related endeavours are considered for support. It is expected that these activities will contribute to the promotion, protection, maintenance and restoration of the health of Canadians.

The terms of reference for both the NHRDP and Medical Research Council were discussed in 1974 by representatives of the two agencies. It was agreed that all research projects in the health sciences would be accepted for review by one organization or the other, except when the research in question related to another program such as the Non-medical Use of Drugs or Fitness and Amateur Sport. It was also agreed that the terms of reference for one program would not overlap that of the other. All "borderline" applications would be discussed by both Council and the Research Programs Directorate and a decision would be made as to which should accept the application for review.

All research projects, studies and demonstrations were reviewed for relevance to departmental goals and interests, significance to the fields of health care and health research, and the validity of the research methods to be employed. Relevance and significance assessments are made by departmental officials and experts in the health field, respectively. The project's validity is assessed by a committee of peers.

In the 1974-75 fiscal year, almost \$10.7 million was spent under the NHRDP in support of a range of activities in 14 categories. Significant new areas of support represent major attempts to improve the quality of health research in Canada. In recognition of the fact that many potentially important projects fail to win financial support each year because of poor research design, a new "Formulation of Proposals" category was added to the list of eligible activities. To assist health investigators while formulating a research proposal, up to \$15,000 can be made available to provide for expert assistance and talent to which the investigator may not have ready access. The marked increase in funds allocated to the NHRDP's Research Personnel Support Program in 1974-75 reflects the importance with which sound research training is regarded. Almost 20% of the NHRDP's 1974-75 budget was used to support individuals wishing to prepare for a career in health research who require either formal training

Payments for extramural research and related activities in the human sciences, by department or agency, year ended March 31, 1975



or experience in independent research, and accomplished investigators who require the independence to commit a significant amount of their time to health research.

In an effort to ensure that the NHRDP remains responsive to health problems on the horizon as well as to those now facing the country, the Research Programs Directorate in 1974 initiated a series of meetings to identify research priorities.

9.2.11 Department of Regional Economic Expansion

When the Department of Regional Economic Expansion (DREE) was created in 1969 to integrate and develop federal efforts to overcome regional economic disparities, the establishing legislation authorized the Department to prepare and implement, in co-operation with other federal agencies and with provincial governments, development plans and programs designed to meet the special needs of areas where growth in both employment and incomes was lagging behind other parts of Canada. A second major legislative measure, the Regional Development Incentives Act (RSC 1970, c.R-3), provides a program of industrial incentives to encourage manufacturing and processing industries to establish, expand or modernize in designated parts of the country where new jobs are needed. The original designated regions included all of the Atlantic region except Labrador, much of eastern Quebec, and parts of every other province.

Under the latest regulations, effective April 1, 1974, the designated regions include the entire provinces of Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba and Saskatchewan, the province of Quebec, excluding the Montreal-Hull corridor, and most of the northern part of Ontario. Incentives may also be given to resource-based industries in rural areas of Alberta and British Columbia. Each regional Assistant Deputy Minister is principally responsible for the incentives program in his region, and has authority to approve medium-sized cases (up to \$1,500,000 in approved capital costs or 100 jobs). The Minister, on the advice of his Regional Development Incentives Board, makes the final decision with respect to incentives for highly sensitive and large-scale projects.

There is now a standard set of formulas for the calculation of a grant or loan guarantee. The absolute ceiling, for a new facility or a new product expansion, may be 50% of the total capital employed; 25% of the approved capital costs plus \$5,000 for each job created; or \$30,000 for each job. The amount of incentive offered in an individual case is determined by assessing the various financial and economic implications of each project. Factors analyzed include the project's economic impact on the region concerned and the company's need for an incentive in order to create a viable operation in the designated region. Experience to date has shown that these incentives exert a strong influence on industry to undertake new activity in the designated areas. From the program's introduction to May 31, 1974, 2,677 applicants accepted offers of incentives totalling approximately \$443 million for projects involving an estimated total investment of \$2,200 million, and the creation of some 108,000 new jobs in various parts of the country when the new operations are brought into production.

Special area program. Under this program, authorized by the 1969 Government Organization Act, the federal government was able to designate, in consultation with a province, areas where special action seemed needed to promote economic expansion and social adjustment. The type of action would vary, from area to area, because each plan would be designed, through federal-provincial co-operation, to meet specific needs.

In March 1970, 22 special areas were designated, and federal-provincial agreements were signed to cover specific infrastructure development projects in 18 of them. In the other four, the main federal assistance was through the Incentives program. A 23rd special area, Ste-Scholastique, was designated in February 1971; infrastructure projects for that area were included in an amended Special Areas Agreement with Quebec. These agreements committed the Department to provide up to \$440 million in grants and loans to the various provinces, over the period to March 1975; these are additional to any federal funds offered in industrial incentives.

The Cape Breton Development Corporation was established in 1967 to rationalize the coal industry of Cape Breton Island and broaden the economic base of the area by assisting the financing and development of industry to provide employment outside the coal mines. From its head office in Sydney it now operates three mines in the Sydney coalfield and is developing

one new one. It is actively engaged in development of the tourist industry as well as primary products and various secondary industries. The Corporation offers a very flexible program and the amount of financial assistance it makes available is determined by the merits of each individual application. The Corporation reports to Parliament through the Minister of Regional Economic Expansion.

Other DREE programs. The Agricultural and Rural Development Act (ARDA) is a federal-provincial shared-cost program with provisions for rural development and adjustment programs. Five-year ARDA agreements, for the 1970-75 period, have been signed with all provinces except Prince Edward Island, which is covered by a comprehensive rural development plan. New special agreements emphasizing programs for disadvantaged Indian and Métis people have also been signed with Manitoba, Saskatchewan and British Columbia.

The Fund for Rural Economic Development (FRED), which is still active in five areas, will continue until the existing projects reach completion. Thereafter, the General Development Agreement and its Subsidiary Agreements will be the DREE instrument for action.

Since its creation in 1935 the Prairie Farm Rehabilitation Administration (PFRA) has concentrated on large irrigation and water-control projects, and on irrigation, stock-watering and domestic water supply projects at the farm level. It has also distributed, free of charge, up to 10 million seedlings a year for farm shelterbelts. While activities of this kind retain their importance, PFRA is shifting its emphasis to become an instrument for implementing various adjustment and development programs in western Canada. Among these programs are the Agricultural Service Centres Agreements, signed with each of the Prairie provinces, to assist with the installation of water and sewage facilities in centres that provide essential services to the surrounding agricultural communities.

The Newfoundland Resettlement Program is a federal-provincial shared-cost program established to help people in Newfoundland move from areas where economic prospects are poor to parts of the island that afford better employment opportunities and public services.

The Atlantic Development Council, with 11 members appointed by the federal government in consultation with the governments of the Atlantic provinces, and the Canada Council on Rural Development, composed of representatives of private organizations who are appointed by the Minister, both act as advisory bodies to the Minister of Regional Economic Expansion.

The Department also administers, on behalf of the Department of Finance, the Winter Capital Projects Fund. This fund provides loans to municipalities across the country, to undertake construction projects that will create jobs in the period of high winter unemployment.

The Department through the Atlantic Development Council, continues the support given formerly by the Atlantic Development Board to the development of a research capability in universities in the Atlantic provinces. The support is provided through capital grants for major research equipment; there is no provision for operating expenses or minor equipment. The grant pattern is irregular: \$3.6 million in 1971; less than \$1 million in 1972 and 1973; no grants in 1973-74. Since inception in 1966, over \$11 million has been provided in this program.

9.2.12 Economic Council of Canada

The Economic Council of Canada is a research and advisory body with a broad mandate to study and report on matters of economic concern to the government and people of Canada. The right to publish enables the Council to present its own views directly to a wide public audience. The Act requires the Council to publish annually a review of medium- and long-term economic prospects and problems. The *Eleventh Review: Economic targets and social indicators* was issued in November 1974. Other consensus studies are issued individually without a predetermined timetable. In this category are the 1974 publication *Toward more stable growth in construction* and the recent report on commercial policy, as well as ongoing work on financial markets, the labour market, social indicators, regional studies, and the long-term future. The Council also publishes background research studies, and technical reports on the CANDIDE model of the Canadian economy. An important activity of the Economic Council in 1973 and 1974 was its sponsorship of the National Economic Conference, a forum

which drew together a wide variety of leading business, labour and other representatives to encourage more effective harmonization of economic decision-making.

9.2.13 Medical Research Council

The Medical Research Council (MRC) is the main channel through which the federal government provides financial support for research in the health sciences initiated and carried out in Canadian schools of medicine, pharmacy and dentistry. It had existed in various administrative forms within the framework of the National Research Council since 1938 but in 1969, with the passage of the Government Organization Act, it became a departmental Crown corporation in its own right. It reports to Parliament through the Minister of National Health and Welfare but is completely separate from the Department. The Council itself is made up of a full-time president appointed by the Governor in Council, a vice-president and 20 members, drawn chiefly from the universities, who serve without remuneration for terms of up to three years. The program is administered by a small full-time secretariat of scientific and administrative personnel.

Under the terms of its legislation, the MRC has authority "to promote, assist and undertake research in the health sciences, with the exception of public health research". The latter, by statute, is the responsibility of the federal Department of National Health and Welfare. Its program is divided into three main sectors: grants, awards, and research development. Expenditures of the Medical Research Council for 1974-75 totalled \$43.7 million, of which \$840,000 was spent on administration of its programs.

The Grants Program is by far the largest component of the MRC operation, accounting for \$27.3 million in 1974-75. Applications from investigators on the staff of Canadian universities and affiliated institutions are considered on three occasions each year. The basis for this consideration is peer assessment; each application is reviewed by external referees expert in the field involved and then considered by one of 17 grants committees, each composed of eight to 10 senior investigators drawn from universities, government and industry. The recommendations of these committees are then forwarded to the Council and awards are approved to the extent that funds permit. Most are made annually but, where a research program of high merit has reached a stable level of expenditure, support in a specified annual amount may be provided for terms of three to five years. The grants are designed to provide for the normal operating costs of approved programs and for items of special research equipment; they may not be used for the remuneration of the investigator to whom the award is made.

The Awards Program provides support for research personnel in several categories. There are opportunities for research training of graduates of high calibre at the postdoctoral level through Fellowship and Centennial Fellowship programs and at the predoctoral level through a program of Studentships. These awards are all prize awards and the number of successful candidates is therefore limited. Many other research trainees, however, receive support through the operating grants to investigators who supervise their training. The MRC Associateship program provides continuing salary support for a limited number of highly qualified independent researchers working in universities and devoting at least 75% of their time to research and graduate teaching. The MRC Scholarship provides young investigators who have completed their formal research training with an opportunity to demonstrate in a university setting their potential for independent research without the necessity of, at the same time, carrying a heavy undergraduate teaching load; these awards are tenable for up to five years. Provision is also made for the exchange of information among Canadian scientists through the Visiting Professorship Program, and among Canadian scientists and their foreign colleagues by means of the Visiting Scientist Program under which Canadian investigators may spend up to one research year abroad or foreign scientists may spend periods of three to 12 months working in Canadian laboratories.

A significant portion of the MRC's developmental funds is used to assist in the correction of disparity, both regional and disciplinary, in Canada's research effort; universities attempting to build up programs in underdeveloped fields are encouraged to apply for Development Grants in a special program designed to assist the deans of health science faculties in the recruitment of new staff by giving assurance of research funds and equipment, and, if necessary, of salary support for limited periods. A special Group Program has been developed

to provide research support to groups of two or more accomplished investigators who wish to engage in collaborative work in what appear to be especially productive areas. Investigators comprising MRC Groups are expected to devote virtually all their efforts to their common research objectives, and receive from the MRC what is essentially full support of their research program. There are now 10 MRC Groups, working in fields ranging from neurosciences to medical genetics, located in the following universities: Montreal, Alberta, McMaster, McGill, Manitoba, Laval and Toronto. Under the heading of Research Development, the MRC also provides financial support for scientific symposia and workshops held in Canada, and assists in defraying the operating costs of the Canadian Council on Animal Care.

9.2.14 Central Mortgage and Housing Corporation

The shift in emphasis in the Corporation's research and development program, begun in 1973, gained momentum during 1974. The major research and development priorities of the Corporation for 1974 included investigation of housing and community needs, increased understanding of housing costs and prices, information and methods of evaluating and improving ongoing NHA programs, innovation in housing and housing-related technology, the development of new housing policies, and communication of research and research findings through publications, workshops and conferences.

As part of the Corporation's continuing research into housing and community design a Development Group was established in 1974 to investigate three areas: land use, settlement patterns and technology. The land use study is considering new ways of integrating housing with existing shopping centres and light industrial areas, while the settlement patterns group is examining the development of the "inner city" and current problems of rural housing and small communities. Technology covers the broader area of how new construction methods and concepts can improve Canadian housing in general. In past years CMHC, in co-operation with other research groups, has helped to develop CANWEL (Canadian Water Energy Loop), a system of recycling domestic waste water which also utilizes the energy potential in domestic solid waste. Investigations have also begun into the economic use of solar energy as a domestic heating source. To complement these research efforts CMHC, during 1974, created a Demonstration Program which, by using the advances made through development and research, will demonstrate their feasibility in actual housing subdivisions. Two such programs have already begun: a 400-acre Woodroffe Avenue Demonstration Project in the National Capital Region and another in the Ottawa LeBreton Flats.

9.3 Provincial agencies

9.3.1 Economic planning

Nova Scotia's Voluntary Planning, an organization representing non-government elements of the Nova Scotia community, was established in 1963 with the general objective of involving the private sector, on a co-ordinated and balanced basis, in a continuing program of economic and social development.

The organization comprises the following main components: sector committees representing "grass roots" elements of producers, private business, labour and government in agriculture, construction, fisheries, forestry, mining, tourism, transportation and secondary manufacturing; advisory councils in consumer affairs, education, power development and labour-management affairs; the Provincial Planning Board, which is made up of the sector and council chairmen, together with other representatives of business, labour and government; and a small professional staff which provides administrative and technical support to the volunteer groups.

Voluntary Planning provides for the effective involvement of the private sector in development planning; facilitates the identification of problems by the private sector and relates appropriate private and public resources in an attempt to resolve these problems; and involves the private sector in the analysis of government planning proposals during the process of their development, prior to final approval.

Through this planning agency government has a single contact with all major elements of the private sector and the private sector has both a forum for discussing mutual problems and a direct channel to government for submitting co-ordinated views on any aspect of development planning.

Quebec Planning and Development Bureau. In 1969, the Quebec Planning Board, created the previous year, became the Quebec Planning and Development Bureau, a corporate body administered by a Director General, who is chairman, and five other members.

The Bureau is responsible for economic, social and territorial development. It prepares economic, social and territorial development plans, programs and projects; collects data and information; co-ordinates research and formulates recommendations; advises the government on the policies and programs of governmental agencies and departments; and acts as a co-ordinating agency between government departments and organizations. The Bureau also directs and ensures the carrying out of any plan, program or project for economic and social development entrusted to it by the Lieutenant Governor in Council and acts as co-ordinator and project supervisor and administers the funds entrusted to it.

Two organizations advise the Bureau on subjects referred to them for consultation: the Interdepartmental Planning and Development Council, comprising all deputy ministers of the Quebec government, and the Quebec Planning and Development Committee which represents Quebec socio-economic organizations, major specialized councils, regional representatives and special members.

The Bureau is responsible for administering the following agreements. The Canada-Quebec Co-operation Agreement for Development of the Lower St. Lawrence, Gaspé and Magdalen Islands, covering the period 1971-76, which began under the FRED program and replaced the 1968 agreement on eastern Quebec; additional funds made available when the Agreement was revised facilitated a shift in emphasis to development programs. The Canada-Quebec Federal-Provincial Rural Agreement, 1971-75, which operates under the ARDA program, makes funds available to speed implementation of an integrated resource-development program in the Saguenay-Lac St-Jean and northwestern Quebec areas. The Canada-Quebec Federal-Provincial Agreement Concerning the Development of Special Areas covers development in the Quebec City, Trois-Rivières and Sept Îles-Port Cartier regions as well as in the sub-region of the new Montreal International Airport. Beginning in March 1974, the Bureau took over administration of the Quebec General Development Agreement which will replace the other federal development agreements as they expire.

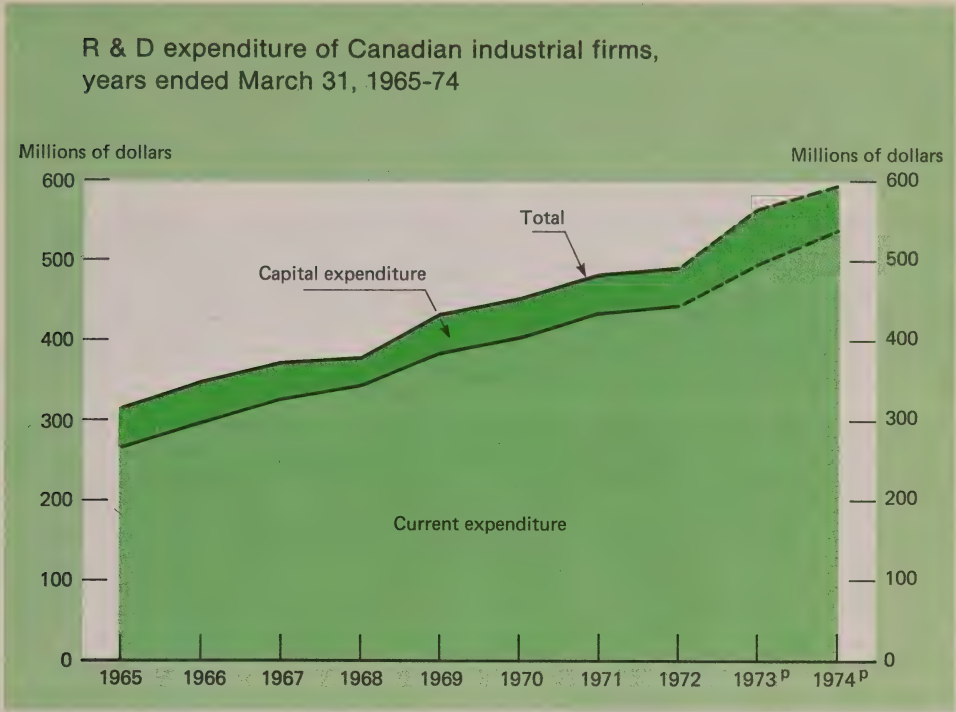
The Ontario Economic Council, formed initially by Order in Council in 1962, was established by legislation in 1968. It is an organization in which representatives of a broad cross-section of informed people can pool their knowledge and experience regarding social and economic questions, commission research and formulate policy recommendations to the public and private sectors. At present, 21 Ontario citizens serve on the Council representing business, finance, labour, agriculture and universities. Each member serves without compensation for a term of one, two or three years. The Council meets not less than five times a year, generally in Toronto although meetings are held occasionally in other Ontario centres. A permanent Council staff undertakes direct assignments and supervises the design and administration of projects assigned to others on a consulting basis. Areas of study are established as a result of liaison and discussion with the public and private sectors.

The Council is an independent body. The results of its work are made available to government and the public and recent reports cover the fields of economic, environmental, social and municipal policies in Ontario. The Council works in co-operation with the Economic Council of Canada.

9.3.2 Industrial research

The Nova Scotia Research Foundation was created by the government of Nova Scotia in 1946 to provide industry and government with scientific and technical assistance in finding new and better ways to utilize the natural resources of the province and to assist the processing industries. The Foundation's laboratories are located in Dartmouth and were built with funds granted by the Atlantic Development Board on a 10-acre site donated by the province. The building was first occupied in 1969 and now houses a staff of 85 which includes 67 scientists and technicians.

The Foundation is governed by a board made up of scientists and industrialists and its operations are carried out in six divisions. The Geophysics Division carries out gravity, seismic, magnetic, well-logging and electromagnetic surveys on land, and seismic bottom



profiling and magnetic surveys at sea for industry and for government. It sponsors a program of research on the surficial geology of Nova Scotia. The Chemistry Division, through research and development, utilizes the minerals and other natural resources of the province to develop new processes and products. Contract services are available to industry and government in areas of inorganic and food chemistry, pollution control and chemical engineering.

The Operational Research Division provides a service for industry and government by utilizing the mathematical techniques of systems analysis and undertakes projects in the area of optimal resource allocation, production scheduling and distribution. The Centre for Ocean Technology emphasizes ocean oriented electronic and mechanical engineering. The Technical Services Division provides technical information on materials, equipment and processes and gives industrial engineering assistance to manufacturing industries. The various sections of this Division include technical inquiries, industrial engineering, marketing and a related information centre. The Biology Division carries out research on the distribution, growth, conservation and utilization of commercial seaweeds. The Division is also involved in microbiological research related to water pollution and the treatment of industrial waste waters.

The Foundation library is well stocked with scientific and technical information to aid the Research Foundation staff, industry and government.

A *Research foundation bulletin*, issued occasionally, keeps industry advised of Foundation activities and of important discoveries in science and technology. Annual reports are published regularly.

The New Brunswick Research and Productivity Council is a body corporate set up in 1962 by an Act of the New Brunswick Legislature. It is governed by an independent group of prominent citizens from management, labour and the professions, which meets four times a year. Members are appointed for three-year terms. The capital investment was provided by the

federal government. The majority of the Council's operations are carried out on a cost-recovery basis under contract with industry, trade associations, and national and international agencies. The Executive Director has charge of all matters relating to the administration of Council affairs and has supervision over and direction of the work of the staff. The Council maintains a well-equipped centre for engineering and problem-solving, industrial research and development and, in addition to its provincially oriented projects, conducts research on a cost-recovery basis for clients in other areas of Canada and in other countries.

Quebec Industrial Research Institute (QIRI), established by a National Assembly Act on December 12, 1969, is a corporation as defined in the Civil Code. The Institute is composed of a Director General and 14 members from industry, university and government. Its main objectives are: research in applied sciences carried out either in its own laboratories or in those of other research institutes; development of products, processes and equipment of an industrial or scientific nature; and collection and distribution of technological and industrial information. Headquarters are located in the vicinity of Quebec City.

The Ontario Research Foundation (ORF), established in 1928, is an independent corporation. It derives its powers from a special Act of the Ontario Legislature and is responsible to a board of governors consisting of leading members of the industrial, commercial and scientific communities. The organization was financed initially by an endowment fund, provided by industrial and commercial corporations through the Canadian Manufacturers' Association, and a matching grant from the provincial government. Most of its current income is derived from contract research undertaken mainly for industry. In recent years the Ontario government has provided an annual grant to ORF, the amount of which is directly proportional to ORF's income from industry. The Foundation is concerned primarily with the development of Canadian industry through the application of science and technology. Also, at the request of the various levels of government, it undertakes work relative to federal and provincial needs. Foundation activities are not restricted to the province; work is undertaken for any organization in Canada on the same basis.

The Foundation undertakes industrial research and development for companies and government agencies as requested, and provides and maintains an effective and efficient applied research and development facility for the use of industry and government agencies. Funds provided by the Ontario government support the back-up research necessary for this purpose, and help bring to the attention of industry and government agencies research opportunities that promise economic or social benefits. Situated in the Sheridan Park Research Community, ORF has a staff of approximately 300 scientists, engineers, technicians and service personnel.

Since its establishment, ORF has provided both large and small companies with research and development services. These have ranged from short-term investigations, market research and feasibility studies, through product and process development to long-range fundamental scientific investigations. All projects are conducted confidentially; this includes all business, technical or proprietary information revealed to ORF by clients or prospective clients. Patents resulting from research and development studies are assigned to the client.

The Manitoba Research Council consists of seven members and several advisory committees whose members represent natural-resource-based industry, manufacturing, labour, the universities and government. Permanent staff members are provided by the provincial government. Its work is financed by provincial government appropriations, although fees and service charges may be levied for its services. The Council promotes or carries out, or causes to be promoted or carried out, research and development investigations related to the natural resources and industrial operations of the province. At present, research sponsored by the Council is performed in existing research laboratories of the province. Much of the research is aimed at establishing Manitoba as a centre of excellence in food products, electronics, materials research and building systems. In addition, through a technical information service, industries are encouraged to incorporate new technological developments in their operations. The main reason for the establishment of the Council is to assist Manitoba industry to improve its market position by developing a more scientifically based production capability. The Council maintains an office in Winnipeg.

The Saskatchewan Research Council was set up in 1947 under an Act of the Saskatchewan Legislature. The Council carries out research in the physical sciences with the aim of improving the provincial economy with particular emphasis on the commercial exploitation of provincial resources and the scientific aspects of business. At first the Council had no scientific personnel and laboratory facilities of its own, and carried out its research programs at the University of Saskatchewan by means of grants to members of the staff and scholarships to graduate students. The 1947 Act was amended in 1954 to empower the Council to acquire property, employ staff and conduct its own financial affairs. Laboratory buildings were erected on the university campus in 1958 and were extended in 1963. The present program places emphasis on technical assistance to industry and provincial government departments, research in the areas of metallic and industrial minerals, water, the environment, slurry pipeline transportation and selected aspects of agriculture. A large part of the program is carried out by a full-time staff of about 100 but some of the Council's research is still promoted by grants to university staff. The members of the Council consist of representatives of the Saskatchewan government, the university and industry.

Research Council of Alberta. The government of Alberta set up a scientific and industrial Research Council in co-operation with the University of Alberta in 1921 to promote mineral development within the province. Considerable effort is still directed toward the development of natural resources, but increasing emphasis is being given to research related to the establishment of new industries within the province, to transportation and to environmental problems. The principal areas of activity are fossil fuels development and utilization, geological surveys and research, groundwater, soils, industrial minerals, chemical product and process development, microbiology, technical assistance to industry, gasoline and oil testing, pipeline transportation, highway research, river engineering, environmental studies and hail research.

The operations of the organization are controlled by a Council of 15 individuals representative of the Alberta government, the universities and industry. The various research fields are reviewed by advisory committees of specialists drawn from industry, the universities and provincial government. The activities of the Research Council of Alberta are financed by provincial government appropriations and by contract research for private industry and federal agencies. The main Council laboratories and offices are located on the University of Alberta campus in Edmonton. A pilot plant and laboratory facility is located in the Clover Bar area east of the city. The full-time staff comprises approximately 280 scientists, engineers, technologists and supporting personnel.

B C Research performs a technical function for the British Columbia Research Council, a non-profit industrial research society with offices and laboratories at Vancouver, BC. This function is to enable even the smallest firms to improve their competitive position in Canadian and world markets by the use of the most up-to-date scientific knowledge. B C Research carries out contract research for clients on a confidential basis, initiates in-house research programs designed to promote and utilize the resources of the province, and provides a free technical information service in collaboration with the National Research Council. B C Research is active in the areas of applied biology, chemistry, engineering, physics, ocean engineering, operations research, industrial engineering, industrial market studies and economic feasibility studies.

9.4 Research and development expenditures

In 1972 Canada's current expenditures on research and experimental development in the natural sciences were estimated to be \$1,042 million, divided as shown in Table 9.1. The federal government is the major source of funds for research and experimental development providing 51% of the total current funds.

9.4.1 Federal expenditures

Information on the expenditures of the federal government on scientific activities is secured by two annual surveys carried out by Statistics Canada, one for the natural sciences and the other covering the human sciences. Each survey covers the actual costs of scientific programs for the preceding fiscal year and estimated expenditures for the following two years.

Natural sciences. In addition to research and experimental development, data are collected on five other classes of scientific activities in the natural sciences. These activities, often grouped as "related" scientific activities, include: scientific data collection, scientific information, testing and standardization, feasibility studies and scholarship programs. Data are also collected on personnel, sector of performance, object of expenditure, category of R&D, field of science and regional distribution of expenditures and personnel. Complete results are presented in the annual publication *Federal government activities in the natural sciences*, Catalogue No. 13-202.

Total federal government expenditures on activities in the natural sciences for 1974-75 were estimated at \$1,065.8 million, representing almost 5% of the total federal budgetary estimates (Table 9.2). Scientific expenditures were reported by 29 departments and agencies; 11 of them spent more than \$10 million on scientific activities in 1974-75. R&D accounts for almost 72% of the total 1974-75 current expenditures; with slight variations this proportion has held constant for the past 10 years. Scientific data collection — the gathering, processing, collating and analyzing of data on natural phenomena — is the principal related activity accounting for almost one half of the 1974-75 estimated expenditures for such activities. Table 9.3 shows federal scientific expenditure by type of activity and by major department or agency for the years ended March 31, 1975. Principal application of current expenditures by performer is given in Table 9.4.

In 1974-75 approximately 52%, or \$368 million, of federal government current expenditures was for work done within its own establishments. An estimated full-time equivalent of 25,908 persons employed by the federal government were engaged in scientific activities in 1974, 16,355 in R&D work. Employees in the scientific and professional category accounted for 6,838 man-years (Table 9.5).

Almost all payments to extramural performers of scientific activities go either to Canadian industry (50% of 1974-75 current extramural expenditures) or to educational and non-profit institutions (40%). Support of industrial R&D is provided principally through a group of special programs designed to develop a research capacity in Canadian industry by assisting current R&D work. Expenditures under these programs reached \$115 million in 1974-75. Support of research in Canadian universities and related institutions is also provided primarily through grants programs, with expenditures totalling \$135.6 million in 1974-75 (Table 9.6).

Human sciences. In 1971 Statistics Canada conducted an experimental survey of the human and financial resources of the federal government devoted to the human sciences. Such information had become necessary not only to complement data on the natural sciences but also because of the growing importance of these disciplines in policy decisions. The results of this experimental survey were published in *Federal government expenditures on the human sciences*, Catalogue No. 13-545.

The first annual survey of federal government activities in the human sciences was conducted in 1972 and covered most of the federal departments and agencies that have expenditures in these disciplines. As in the natural science survey the resources are measured in terms of two inputs: expenditures and manpower. Data were collected for the following activities: research, general data collection, scientific information, education support and operations studies. Complete results of this survey were published in *Federal government activities in the human sciences 1971-73*, Catalogue No. 13-205.

The latest survey indicates that federal departments and agencies expected to spend about \$306.9 million for activities in the human sciences during the fiscal year 1974-75. This amount represents the total federal financial support of human science activities, whether carried out within government establishments or supported in other sectors under the form of grants, contracts, scholarships or other agreements. Most of the resources, however, some 69%, are spent intramurally for activities performed by government employees. "General data collection" represents the largest activity in the human sciences supported by the federal government. Table 9.7 gives the breakdown of federal expenditures on the human sciences by category of activity and sector of performance.

Research constitutes the second most heavily supported activity with almost one third of the federal resources devoted to the human sciences in 1974-75. Research expenditures are about equally divided between intramural research and the support of research carried out in

other sectors. Thirty-six different departments and agencies devote resources to research in the human sciences, 11 of them having research expenditures of over \$3 million (Table 9.8).

Tables 9.9 and 9.10 show the extramural payments for research and related activities in the human sciences by federal department or agency. Personnel engaged in intramural research amounted to the equivalent of 2,113 man-years in 1974 (Table 9.11).

9.4.2 Provincial expenditures

Eight provinces have established research councils or foundations, each having the primary role of assisting firms with technical problems and of aiding the development of provincial natural resources. In 1972 these organizations spent \$19.6 million on scientific activities distributed as follows: scientific research 38%; experimental development 19%; resource surveys 9%; industrial engineering 9%; analysis and testing 7%; capital (buildings and equipment) 7%; library and technical information 5%; feasibility studies 4%; and other activities 2%.

These activities are financed largely by provincial governments (68%) but Canadian industry and the federal government are also important sources of funds (17% and 11%, respectively). The councils and foundations reported over 1,000 employees at the end of 1972. There were over 380 scientists and engineers and almost 330 technicians and technologists. The remaining personnel consisted of management, administrative and other support staff.

9.4.3 Industrial expenditures

In recent years industrial research and development has shown no real growth in Canada. Expenditures shown in Tables 9.12 and 9.13 are in current dollars (a constant dollar series might show an actual decrease). In 1972, approximately 68% was company-financed, 15% federal government-financed, with the remaining funds supplied by other Canadian companies, foreign governments and firms. The funding distribution varied between industry groups: companies in the chemical-based group funded 86% of their own R&D whereas the contributions of companies in the machinery and transportation equipment group and the electrical group amounted to 52% and 61% of the respective totals. These last two groups received greater financial assistance from the federal government than did firms in other groups.

Sources

9.1 Information Services, Ministry of State for Science and Technology.

9.2 - 9.3 Supplied by the respective departments and agencies.

9.4 Education, Science and Culture Division, Institutional and Public Finance Branch, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed		certain tables may not add due to rounding

9.1 Total expenditure on R&D, by source of funds, 1963-72, with current expenditure in parentheses (million dollars)

Year	General government ¹	Industry	University	Private non-profit	Foreign	Total
1963	245 (205)	147 (120)	40 (28)	5 (5)	12 (12)	449 (370)
1964	274 (219)	188 (150)	55 (35)	5 (4)	14 (14)	536 (422)
1965	331 (263)	213 (163)	70 (41)	6 (6)	33 (32)	653 (505)
1966	385 (294)	251 (200)	100 (54)	6 (6)	30 (29)	772 (583)
1967	452 (345)	274 (231)	128 (75)	7 (6)	24 (24)	885 (681)
1968	505 (391)	277 (241)	142 (92)	10 (9)	24 (24)	958 (757)
1969	537 (429)	321 (272)	168 (111)	12 (11)	24 (24)	1,062 (847)
1970	558 (458)	329 (281)	188 (129)	12 (11)	29 (29)	1,116 (908)
1971	597 (498)	345 (297)	197 (142)	12 (12)	28 (28)	1,179 (977)
1972	624 (536)	337 (296)	212 (159)	16 (16)	39 (35)	1,228 (1,042)

¹Federal and provincial governments and provincial research councils.

9.2 Federal government expenditure on the natural sciences, by department or agency and performer, year ended Mar. 31, 1975 (million dollars)

Department or agency	Federal government ¹	Canadian industry	Canadian universities and non-profit institutions	Other Canadian performers	Foreign	Total
Environment	224.6	4.8	4.9	6.3	—	240.6
National Research Council	74.8	16.4	67.2	0.5	4.1	163.0
Industry, Trade and Commerce	3.9	97.0	1.8	0.5	—	103.2
Atomic Energy of Canada Limited	75.3	22.8	0.8	0.1	—	99.1
National Defence	87.0	13.3	3.1	—	0.3	103.7
Agriculture	86.7	—	0.8	—	—	87.6
Energy, Mines and Resources	77.7	2.8	1.3	0.3	0.1	82.2
Medical Research Council	1.0	—	38.3	—	2.0	41.3
National Health and Welfare	14.9	0.4	17.1	—	—	32.3
Communications	17.2	11.8	0.5	—	2.3	31.8
Canadian International Development Agency	—	13.7	4.5	—	4.1	22.3
Consumer and Corporate Affairs	9.6	—	—	—	—	9.6
Transport	5.9	1.5	0.7	—	—	8.1
Atomic Energy Control Board	—	0.1	7.4	—	—	7.4
Regional Economic Expansion	0.1	—	—	3.1	—	3.1
Others	15.1	1.2	2.0	1.2	11.0	30.5
Total	693.8	185.8	150.4	12.0	23.9	1,065.8

¹Includes administration costs of extramural programs.

9.3 Federal government expenditure by type of activity in the natural sciences, by department or agency, year ended Mar. 31, 1975 (million dollars)

Department or agency	R&D		Related scientific activities					Capital	Total
	Current	Capital	Current	Data collection	Scientific information	Testing and standardization	Feasibility studies	Scholarship programs	
Environment	87.1	14.9	76.0	37.6	3.4	4.9	0.1	16.6	240.6
National Research Council	134.0	3.0	0.5	11.2	5.8	0.9	7.2	0.4	163.0
Industry, Trade and Commerce	102.7	—	—	—	—	—	0.5	—	103.2
Atomic Energy of Canada Limited	89.9	3.7	1.1	2.5	1.8	0.1	—	—	99.1
National Defence	55.8	4.1	—	2.1	41.5	—	—	0.3	103.7
Energy, Mines and Resources	37.4	3.3	24.0	13.7	1.1	0.7	—	2.0	82.2
Agriculture	75.5	8.4	0.7	2.8	0.1	—	—	0.1	87.6
Medical Research Council	39.7	—	0.2	0.2	—	—	1.3	—	41.3
National Health and Welfare	26.8	0.6	0.4	0.3	3.5	—	0.6	0.1	32.3
Communications	24.8	6.1	—	0.3	—	0.6	—	—	31.8
Others	39.2	3.2	6.1	12.9	2.4	12.2	4.6	0.2	81.0
Total	712.9	47.3	109.0	83.6	59.6	19.4	14.3	19.7	1,065.8

9.4 Principal application of current expenditure on natural science R&D, by performer, year ended Mar. 31, 1975 (million dollars)

Application	Federal government	Canadian industry	Canadian universities and non-profit institutions	Other ¹	Total
Free basic research	12.3	—	39.8	0.9	53.1
Agriculture	76.6	—	0.8	0.4	77.8
Construction	8.4	1.4	0.1	—	10.0
Defence	40.8	13.3	3.1	0.3	57.6
Developing countries	—	—	0.9	12.1	13.0
Energy	71.0	22.7	8.3	0.3	102.3
Fisheries	12.7	0.6	0.5	1.4	15.1
Forestry	16.0	0.8	1.2	2.2	20.2
Public health	8.9	0.4	6.5	0.7	16.5
Medical sciences	2.3	—	46.8	2.0	51.0
Manufacturing industry	18.1	114.1	1.4	1.9	135.4
Meteorology and weather	4.2	0.4	0.7	0.1	5.3
Mineral location and extraction	22.3	0.4	0.8	1.4	25.0
Northern development	3.3	0.4	1.2	—	4.9
Pollution	20.5	0.5	1.0	—	22.0
Space	10.7	11.0	—	5.1	26.9
Telecommunications	9.1	0.4	0.4	—	9.9
Transportation	10.4	1.5	0.8	0.1	12.7
Water resources	12.4	0.2	0.8	0.1	13.6
Others	7.9	0.2	20.5	1.9	30.5
Total	368.0	167.9	135.6	31.0	702.5

¹Includes other Canadian and foreign performers.

9.5 Personnel engaged in scientific activities in the natural sciences, by federal department or agency and category, 1973-74 (man-years)

Department or agency	In-house research			In-house related scientific activities			Administration of extra-mural programs	Total
	Scientific and professional	Technical	Other	Scientific and professional	Technical	Other		
Environment	1,128.5	1,186.0	925.0	989.0	2,137.0	1,536.1	9.1	7,910.7
Agriculture	956.6	1,021.9	2,148.3	51.2	63.5	69.5	—	4,311.0
National Research Council	694.0	888.0	651.0	211.0	158.0	324.0	67.0	2,993.0
National Defence	412.0	726.0	700.0	61.0	617.0	307.0	70.8	2,893.8
Energy, Mines and Resources	684.0	344.0	261.0	210.0	666.0	640.0	3.0	2,808.0
Atomic Energy of Canada Limited	643.0	855.0	816.0	37.0	57.0	63.0	—	2,471.0
National Health and Welfare	183.5	195.8	111.1	23.1	28.2	65.3	16.4	623.4
Communications	144.0	159.0	206.5	5.0	—	7.0	—	521.5
Consumer and Corporate Affairs	—	—	—	219.0	50.0	220.0	—	489.0
Others	111.3	116.0	87.4	74.6	96.5	133.8	266.8	886.4
Total	4,956.9	5,491.7	5,906.3	1,880.9	3,873.2	3,365.7	433.1	25,907.8

9.6 Payments to Canadian universities and non-profit institutions for natural science R&D, years ended Mar. 31, 1966-75 (million dollars)

Department or agency	1966	1967	1968	1969	1970	1971	1972	1973	1974P	1975e
Atomic Energy Control Board	1.6	2.0	2.5	3.6	5.4	7.1	11.7	7.9	7.2	7.4
Environment	—	—	—	—	3.4	2.8	2.8	2.8	3.4	4.7
Medical Research Council	11.5	11.2	18.5	25.1	28.0	30.7	32.0	33.8	36.8	36.8
National Defence	2.5	2.9	3.7	3.2	3.3	3.3	3.4	3.1	3.2	3.1
National Health and Welfare	4.2	6.5	14.5	16.8	14.4	12.4	12.6	13.8	19.0	16.5
National Research Council	18.1	29.1	37.9	49.8	55.5	55.5	58.5	58.2	59.6	60.0
Regional Economic Expansion	0.1	0.4	1.4	—	3.7	3.6	0.6	0.7	—	—
Others	3.4	3.9	3.2	4.1	2.7	3.1	3.8	5.5	5.8	7.1
Total	41.4	56.0	81.7	102.6	116.4	118.5	125.4	125.8	135.0	135.6

9.7 Federal government expenditure on the human sciences, by activity and performer, year ended Mar. 31, 1975 (thousand dollars)

Scientific activity	In-house scientific activities	Administration of extra-mural programs	Provincial and municipal governments	Canadian universities	Canadian non-profit institutions	Canadian business enterprises	Foreign	Total
Current expenditure								
Research	48,765	3,675	3,933	19,399	10,785	3,992	8,182	98,731
Data collection	105,229	63	899	517	491	1,774	—	108,973
Information	14,912	1,403	165	3,128	1,406	279	3,095	24,388
Education	96	697	—	15,753	177	85	3,793	20,601
Operations studies	38,907	760	2,373	787	2,925	3,213	295	49,260
Capital expenditure	4,910	—	—	—	—	—	—	4,910
Total	212,819	6,598	7,370	39,584	15,784	9,343	15,365	306,863

9.8 Current expenditure on the human sciences, by department or agency and performer, year ended Mar. 31, 1975 (million dollars)

Department or agency	In-house scientific activities	Administration of extra-mural programs	Provincial and municipal governments	Canadian universities	Canadian non-profit institutions	Canadian business enterprises	Foreign	Total
Statistics Canada	96.5	—	—	—	—	—	—	96.5
Canada Council	0.1	1.3	—	19.4	—	0.1	3.7	24.5
National Health and Welfare	6.8	0.9	3.6	5.8	3.9	..	0.1	21.0
International Development	1.6	2.0	—	—	—	—	6.6	10.2
Research Centre	7.9	0.5	0.3	0.2	0.1	0.6	—	9.5
Manpower and Immigration	8.5	—	—	0.1	—	0.1	—	8.8
National Library	—	—	—	—	—	—	—	—
Canadian International Development Agency	0.4	—	—	3.6	—	—	4.6	8.5
Urban Affairs	5.6	0.2	1.0	1.7	1.8	1.1	..	11.3
Indian Affairs and Northern Development	3.4	0.4	0.4	0.3	0.5	0.2	—	5.2
Economic Council of Canada	4.2	—	—	..	—	—	—	4.3
Transport	0.6	0.4	0.1	0.8	..	1.3	..	3.2
Others	72.3	0.9	2.0	7.7	9.5	5.9	0.4	99.0
Total	207.9	6.6	7.4	39.6	15.8	9.3	15.4	302.0

9.9 Payments for extramural research and related activities in the human sciences, by department or agency, year ended Mar. 31, 1975 (million dollars)

Department or agency	Research	Related scientific activities				Total
		Data collection	Information	Education	Operations studies	
Canada Council	10.1	—	3.0	10.1	—	23.2
National Health and Welfare	9.9	—	0.1	1.3	2.1	13.4
Canadian International Development Agency	4.6	—	—	3.6	—	8.2
International Development	3.5	—	3.1	—	—	6.6
Research Centre	0.8	0.1	—	4.0	0.3	5.2
Secretary of State	0.8	1.1	—	—	0.8	2.7
Environment	2.3	—	1.0	—	2.2	5.5
Urban Affairs	1.2	0.2	—	0.4	0.5	2.3
Transport	4.2	—	—	—	0.4	4.6
Privy Council Office	1.1	—	—	—	0.4	1.5
Industry, Trade and Commerce	7.8	2.3	0.9	0.4	2.9	14.2
Others	46.3	3.7	8.1	19.8	9.6	87.4
Total						

9.10 Payments for extramural activities in the human sciences, year ended Mar. 31, 1975 (million dollars)

Activity and source of funds	Canadian universities	Canadian non-profit institutions	Other performers	Total
ACTIVITY				
Research	19.4	10.8	16.1	46.3
Data collection	0.5	0.5	2.6	3.6
Information	3.1	1.4	3.6	8.1
Education	15.8	0.2	3.9	19.9
Operations studies	0.8	2.9	5.9	9.6
Total	39.6	15.8	32.1	87.5
SOURCE OF FUNDS				
Canada Council	19.4	—	3.7	23.1
National Health and Welfare	5.8	3.7	3.7	13.2
Canadian International Development Agency	3.6	—	4.6	8.2
Regional Economic Expansion	—	0.5	—	0.5
International Development Research Centre	—	—	6.8	6.8
Central Mortgage and Housing Corporation	0.6	2.1	0.4	3.1
Other departments and agencies	10.2	9.5	12.9	32.6

9.11 Personnel engaged in research in the human sciences, by department or agency and category, 1973-74 (man-years)

Department or agency	Executive	Scientific and professional	Administrative and foreign service	Technical	Administrative support	Operational	Total
Agriculture	—	47	—	8	19	—	74
Bank of Canada	2	51	1	33	8	—	95
Central Mortgage and Housing Corporation	1	19	17	2	35	—	74
Consumer and Corporate Affairs	4	29	7	3	18	—	61
Economic Council of Canada	3	59	7	13	45	—	127
Environment	—	57	9	18	30	—	114
Indian Affairs and Northern Development	—	42	3	2	5	30	82
Labour	4	29	10	12	14	—	69
Manpower and Immigration	1	41	21	3	30	—	96
National Health and Welfare	2	43	2	13	26	—	86
National Museums of Canada	1	44	10	51	49	77	232
Public Service Commission	—	173	14	20	84	3	294
Statistics Canada	—	103	7	26	63	—	199
Urban Affairs	2	48	3	20	12	—	85
Others	13	196	43	49	113	11	425
Total	33	981	154	273	551	121	2,113

9.12 R&D expenditure of Canadian industrial firms, years ended Mar. 31, 1965-74 (million dollars)

Year	Current expenditure			Payments outside Canada	Total	Capital expenditure	Total
	In Canada Intramural	Extramural	Total ¹				
1965	236.8	12.8	239.0	27.7	266.7	50.6	317.3
1966	266.4	13.8	269.1	30.8	299.9	50.7	350.6
1967	290.6	15.1	293.9	34.5	328.4	43.7	372.1
1968	305.1	16.1	308.8	36.3	345.1	35.8	380.9
1969	342.9	22.8	346.8	37.4	384.2	49.0	433.2
1970	355.2	27.1	358.7	45.0	403.7	48.3	452.0
1971	383.2	30.8	386.2	49.4	435.6	47.9	483.5
1972	384.7	35.5	388.0	57.9	445.9	45.6	491.5
1973P	435.8	35.8	439.1	58.4	497.5	69.8	567.3
1974P	470.0	40.0	474.0	65.0	539.0	56.0	595.0

¹To avoid double counting, certain transfers from one respondent to another have been subtracted from the sum of all Canadian intramural and extramural expenditures. Such transfers would be entered once as intramural and once as extramural.

9.13 Industrial R&D expenditure, 1972

Industry group	Intramural R&D expenditure			Source of funds			
	Current	Capital	Total	Reporting company		Federal government	
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	% of total	\$'000,000	% of total
Mines and wells	21.3	2.8	24.1	9.7	40	3.3	14
Chemical-based	84.5	8.1	92.6	79.6	86	5.8	6
Wood-based	18.8	1.3	20.1	12.4	62	2.5	12
Metals	40.4	3.3	43.7	36.9	84	1.7	4
Machinery and transportation equipment	71.6	4.3	75.9	39.2	52	24.8	33
Electrical	114.9	6.5	121.4	74.4	61	21.5	18
Other manufacturing	7.8	0.9	8.7	7.1	82	0.9	10
Other industries	25.4	18.4	43.8	35.1	80	2.9	7
Total	384.7	45.6	430.3	294.4	68	63.4	15

Sources

9.1 - 9.13 Education, Science and Culture Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

Chapter 10

Renewable resources

10.1 Forestry

The forests of Canada are largely coniferous and make up 35% of the total land area; of this forest, less than 5% is reserved, i.e. parks and reserves where, by legislation, wood production is not primary. In 1972, 4,383 million cu ft of roundwood was cut. The harvesting and processing of this timber generated work for 271,000 persons with a payment of \$2,364 million in salaries and wages. The “value added” by processing beyond the raw materials stage amounted to \$4,213 million which was 9.7% of the value added of all goods-producing industries.

Canada is a major exporter of forest products. Exports of wood, wood products and paper in 1972 amounted to \$4,595 million which was 19% of the value of all commodity exports. Paper and paperboard constituted 34% of all forest products exports; newsprint alone accounted for 28%.

British Columbia, Ontario and Quebec are the most important timber-producing provinces. In 1972 British Columbia sawmills produced 69% of all lumber in Canada and most of the sulphate pulp and softwood plywood while Ontario and Quebec produced most of the groundwood pulp and hardwood plywood.

There is a growing awareness of the importance of the forest in such areas as recreation, wildlife habitat and streamflow regulation. The recognition of these values is fostering a broader and more realistic concept of forestry.

10.1.1 Forest resources

10.1.1.1 Forest regions

The forests of Canada cover a vast area in the north temperate climatic zone but wide variations in physiographic, soil and climatic conditions cause marked differences in their character; hence, eight fairly well-defined forest regions may be recognized. By far the largest of these is the Boreal Region which represents 82% of the total forested area. The Great Lakes–St. Lawrence Region covers 6.5% and the Subalpine Region 3.7%. The Montane, Coast, and Acadian regions each account for approximately 2% while the remaining Columbia and Deciduous regions each represent less than 1%.

Boreal Forest Region. This Region comprises the greater part of the forested area of Canada. It forms a continuous belt from Newfoundland and the coast of Labrador westward to the Rocky Mountains and northwestward to Alaska. White spruce and black spruce are characteristic species; other prominent conifers are tamarack which ranges generally throughout, balsam fir and jack pine in the eastern and central portions, and alpine fir and lodgepole pine in the western and northwestern parts. Although the Boreal forests are primarily coniferous there is a general admixture of deciduous trees such as white birch and poplar; these are important in the central and south-central portions, particularly along the edge of the prairie. In turn, the proportion of spruce and larch increases to the north and, with the more rigorous climate, the close forest gives way to an open lichen-woodland which finally changes into tundra. In the eastern section, along the southern border of the Region, there is a considerable intermixture of species from the Great Lakes–St. Lawrence forest, such as eastern white pine, red pine, yellow birch, sugar maple, black ash and eastern white cedar.

Great Lakes–St. Lawrence Forest Region. Extending inland from the edges of the Great Lakes and the St. Lawrence River lies a forest of a very mixed nature which is characterized by eastern white pine, red pine, eastern hemlock and yellow birch. With these are associated certain dominant broadleaved species common to the Deciduous Forest Region, including sugar maple, red maple, red oak, basswood and white elm. Other species with wide ranges are the eastern white cedar and largetooth aspen and, to a lesser extent, beech, white oak, butternut and white ash. Boreal species such as white spruce, black spruce, balsam fir, jack pine, poplars, and white birch are intermixed, and red spruce is abundant in certain central and eastern portions. This Region extends in a westward direction into southeastern Manitoba but does not include the area north of Lake Superior.

Subalpine Forest Region. This is a coniferous forest located on the mountain uplands of Alberta and British Columbia, from the Rocky Mountain range through the interior of British Columbia to the Pacific Coast inlets. The characteristic species are Engelmann spruce, alpine fir and lodgepole pine. There is a close relationship between the Subalpine Forest Region and the Boreal Forest Region, which also shares black spruce, white spruce and trembling aspen. There is also some penetration of interior Douglas-fir from the Montane forest, and western hemlock, western red cedar and amabilis fir from the coastal forests. Other species are western larch, whitebark pine, limber pine and, on the Coast Mountains, yellow cypress and mountain hemlock.

Montane Forest Region. The Region occupies a large part of the interior uplands of British Columbia, as well as a part of the Kootenay Valley and a small area on the east side of the Rocky Mountains. It is a northern extension of the typical forest of much of the western mountain system in the United States, and comes in contact with the Coast, Columbia, and Subalpine Forest regions. Ponderosa pine is a characteristic species of the southern portions. Interior Douglas-fir is found throughout, but more particularly in the central and southern parts; lodgepole pine and trembling aspen are generally present, the latter being particularly well represented in the north-central portions. Engelmann spruce and alpine fir from the Subalpine Forest Region, together with white birch, are important constituents in the northern parts. White spruce, although primarily Boreal in affinity, also grows here. Extensive prairie communities of bunch-grasses and herbs are found in many of the river valleys.

Coast Forest Region. This Region is part of the Pacific Coast forest of North America. Essentially coniferous, it consists principally of western red cedar and western hemlock, with Sitka spruce abundant in the north and Douglas-fir in the south. Amabilis fir and yellow cypress are represented throughout the Region and, together with mountain hemlock and alpine fir, are common at the higher altitudes. Western white pine is found in the southern parts, while western yew is in widely scattered groups. Deciduous trees, such as black cottonwood, red alder and bigleaf maple, have a limited distribution. Arbutus and Garry oak grow only on the southeast coast of Vancouver Island, the adjacent islands and mainland. The arbutus is a broadleaved evergreen. Both are species whose centres of population lie southward in the United States.

Acadian Forest Region. Over the greater part of the Maritime provinces there is a forest closely related to the Great Lakes-St. Lawrence forest and, to a lesser extent, to the Boreal forest. Red spruce is a characteristic though not exclusive species, and associated with it are balsam fir, yellow birch and sugar maple, with some red pine, eastern white pine, jack pine and eastern hemlock. Beech was formerly a more important forest constituent than at present, but beech bark disease has drastically reduced its representation in Nova Scotia, Prince Edward Island and southern New Brunswick. Other species of wide distribution are white spruce, black spruce, red oak, white elm, black ash, red maple, white birch, grey birch and poplars. Eastern white cedar, although present in New Brunswick, is extremely rare elsewhere and jack pine is apparently absent from the upper St. John Valley and the western half of Nova Scotia.

Columbia Forest Region. A large part of the Kootenay Valley, the upper valleys of the Thompson and Fraser rivers and the Quesnel Lake area of British Columbia contain a coniferous forest, called the Columbia Forest Region, which closely resembles the Coast Forest Region. Western red cedar and western hemlock are the characteristic species in this interior "wet belt". Associated trees are the interior Douglas-fir which has general distribution and, in the southern parts, western white pine, western larch, grand fir and western yew. Engelmann spruce from the Subalpine Forest Region is important in the upper Fraser Valley and is found to some extent at the upper levels of the forest in the remainder of the Region. At lower elevations in the west and in parts of the Kootenay Valley, the forest merges with the Montane Forest Region and in a few places borders directly on grassland.

Deciduous Forest Region. A small portion of the deciduous forest, which is widespread in the United States, extends into southwestern Ontario between Lakes Huron, Erie and Ontario. Here, with the deciduous trees common to the Great Lakes-St. Lawrence Forest Region, such as sugar maple, beech, white elm, basswood, red ash, white oak and butternut, are scattered a number of other deciduous species which have their northern limits in this locality. Among

these are the tulip-tree, cucumber-tree, pawpaw, red mulberry, Kentucky coffee-tree, redbud, black gum, blue ash, sassafras, mockernut hickory, pignut hickory, black oak and pin oak. In addition, black walnut, sycamore and swamp white oak are confined largely to this Region. Conifers are few but there is scattered distribution of eastern white pine, tamarack, eastern red cedar and eastern hemlock.

The Grasslands. Although not a forest region, the prairies of Manitoba, Saskatchewan and Alberta support several species of trees in great numbers. Trembling aspen forms groves or "bluffs" around wet depressions, and continuous dense stands along the northern boundary. Several other species of poplar are usually found along rivers and in moist locations, along with willows and some white spruce. There are sporadic stands of white birch, Manitoba maple, bur oak and ash. In British Columbia, where the grasslands are confined to deep valleys and low areas of the interior, there are scattered representations of ponderosa pine, birches, poplars, spruce and mountain alder.

10.1.1.2 Forest land

Inventories of the forest resources of Canada are made periodically by provincial forest authorities and, with their co-operation, the Canadian Forestry Service of the Department of the Environment compiles national statistics.

The 1973 National Forest Inventory reported an area of 1,259,192 sq miles of forest land (Table 10.1). Of this total, 59,742 sq miles are reserved by legislation for primary uses other than timber production. Of the remainder of non-reserved forest land, 632,448 sq miles are allocated to wood production and are held under licence, lease and/or under sustained yield management. The balance of 567,000 sq miles whether for reasons of suitability or economic accessibility is capable of producing crops of merchantable size and as inventories are extended and refined, its area can be expected to increase. Currently, about 75% of the non-reserved forest land of Canada has been inventoried in the sense of gathering statistically reliable information on area and forest cover.

Provincial Crown forest land constituted 69% of the non-reserved forest land of Canada, leaving 23% under federal jurisdiction and 8% in private ownership. Of the provincial forest land 69% is allocated to timber production and of the federal forest land less than 2% is so allocated. Although precise use of private forest land is a matter of speculation, individual studies and limited statistics suggest that timber production still predominates despite a tendency to convert some of this land to recreational use. At the time of the 1973 inventory 8% of the non-reserved forest land was considered inadequately stocked for timber production.

The estimates of volumes of timber, which are given by province in Table 10.1, are also subject to constant revision as more accurate and complete inventories are compiled. The volumes reported in the 1973 National Forest Inventory are somewhat larger than those reported previously due to updating of inventories in some provinces. The estimates, however, are low because timber volumes for Labrador, the Yukon Territory and Northwest Territories are not available and secondly, British Columbia has adopted procedures whereby data on volume of mature timber only were compiled.

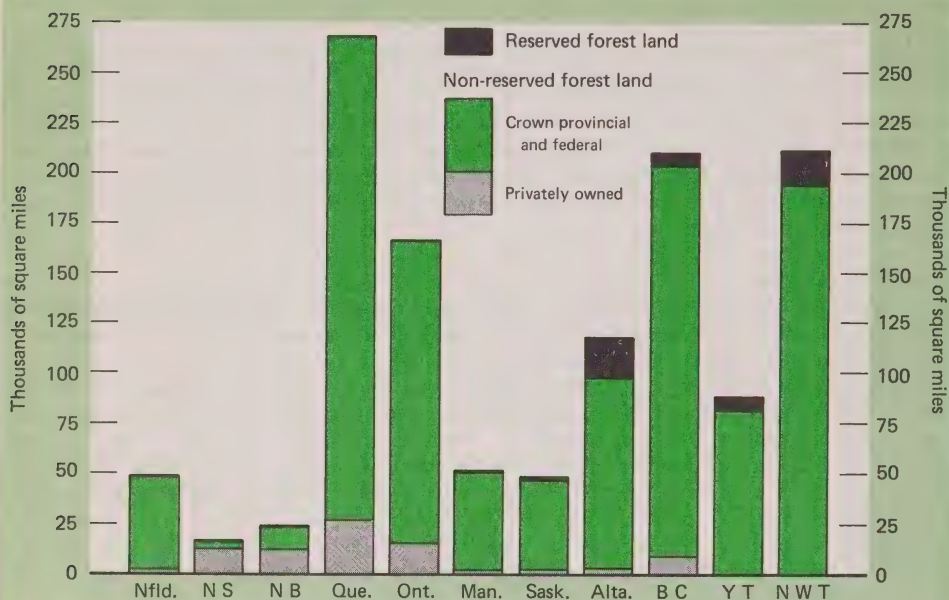
10.1.1.3 Canada's forest trees

There are approximately 140 recognized tree species in Canada, excluding the various subspecies and varieties. Of this number, 31 species are conifers or "softwood", about two thirds of which are of commercial value; less than one fifth of the native broadleaved trees or "hardwoods" can be considered as commercially significant.

The most abundant forest trees in Canada, in terms of standing timber, are the spruces, pines, true firs, poplars, hemlocks, birches, cedars, Douglas-fir, maples and larches. However, the economic importance of these species, except for the spruces, does not necessarily correspond to their abundance.

About one third of Canada's timber volume is spruce. White spruce and black spruce range from the Atlantic Coast almost to the Pacific and northward into Alaska. Sitka spruce, the largest of the native spruces, is found in the Pacific Coast area; Engelmann spruce is established farther inland, extending to the foothills of the Rockies in southwestern Alberta; and red spruce is found only in eastern Canada. Spruce is used extensively for pulpwood, lumber and plywood.

Total forest land ¹
(1973 forest inventory)



1. Excludes Prince Edward Island.

Among the pines, two species — jack pine and lodgepole pine — make up 11% of Canada's standing timber. Jack pine grows from Nova Scotia to northern Alberta and the Northwest Territories and lodgepole pine is found in western Alberta, British Columbia and the Yukon Territory. Eastern white pine, which grows from the Atlantic to the eastern edge of the prairies, and western white pine produce valuable softwood lumber. Ponderosa pine, found in the drier areas of southern British Columbia, and red pine, found in eastern Canada, are important commercial species.

The four native firs are all commercial species, although balsam fir far outranks the other species in this regard. It is the only fir found in eastern Canada and ranges from Newfoundland through all the provinces except British Columbia. Alpine fir, essentially a high altitude tree, is found over a wide area in British Columbia and its range extends well into the western half of central Alberta and the Yukon Territory. Amabilis fir is a west coast species, while grand fir is found in both the Pacific coastal areas and the interior of British Columbia. Fir is commonly cut as pulpwood and, to a lesser extent, as sawlogs.

Douglas-fir, one of Canada's best known commercial trees, is not a true fir. The tree responsible more than any other for British Columbia's world-wide reputation for timber is the coastal form of Douglas-fir which is dominant in the forests of the province's lower coastal areas. An interior form, known as blue Douglas-fir, is used on a large scale for lumber, plywood, construction timbers, piling and kraft pulp.

The poplars are the most abundant of the native broadleaved trees. They include trembling and largetooth aspen, balsam poplar, and the three cottonwoods. The most widely distributed is trembling aspen, followed by balsam poplar; both species occur from Newfoundland to Alaska. The largest of the native poplars is black cottonwood; its range covers the lower two thirds of British Columbia and extends well into Alberta to the east in a pattern that follows the natural drainage basins. It also reaches as far north as the Yukon Territory along the coast. This species is in demand for veneer stock. Other cottonwoods —

eastern cottonwood and its western form known as plains cottonwood, and narrowleaf cottonwood — have a much more limited distribution.

Hemlocks, ranking fifth in volume of standing timber, have considerable commercial importance. Western hemlock grows plentifully along the Pacific Coast and west of the Rockies in the interior wet belt of British Columbia. It is one of the principal timber-producing species in western Canada and is also an important source of pulpwood. Eastern hemlock is found from the Atlantic to western Ontario, although not in a wide or continuous pattern. It is used to produce a number of products including pulpwood, plywood and lumber. Mountain hemlock is found in British Columbia in parts of the coastal forest and in the heavier rainfall areas of the interior.

Of the six native birches, only two are of commercial importance — yellow birch and white birch. Most abundant is white birch which grows over a vast part of Canada from the Atlantic to the Pacific and extends up to the northern tree limit. One variety, western paper birch, reaches heights of 100 ft and diameters of three feet or more. Yellow birch is a valuable hardwood species used extensively for flooring, veneer and plywood. Its range extends from the Atlantic to Lake Superior.

The native trees commonly known as “cedars” include the arbor-vitae (eastern white cedar and western red cedar), yellow cypress (yellow cedar) and a juniper (eastern red cedar). Together they make up an important group of commercial species. Eastern white cedar is found from Nova Scotia to Manitoba and as far north as James Bay in Quebec and Ontario. Its wood, which is light and resistant to decay, is used for posts, poles, boats and other purposes where timber is exposed to situations favourable to decay. Western red cedar is of major importance in British Columbia where it ranges from the Pacific Coast to the Rocky Mountains. It is used for lumber, exterior siding, shingles, poles and posts, doors, window sashes and other purposes where resistance to decay is required. Yellow cypress — commonly called yellow cedar or Alaska cedar — is found mainly in the Pacific Coast region where it grows down to sea level in the more northerly sections. As it extends farther south, it seeks higher elevations. Its wood, like that of the other cedars, is valued in situations where resistance to decay is needed.

There are 10 native species of maple, six of which are of commercial value. Only two species are known as hard maples, producing wood that is both hard and strong — sugar maple and the closely related black maple. Sugar maple ranges from the Atlantic to Lake Superior, while black maple is found mainly in southern Ontario. Hard maple constitutes one of the most valuable commercial hardwoods in Canada. It is used for furniture, flooring, veneer, quality plywood, turnery and other specialized purposes where strength and hardness are needed. Sugar maple and, to a lesser degree, black maple are tapped for the maple sugar industry. Bigleaf maple is found on the lower Pacific Coast mainland and on Vancouver Island. The wood is only moderately hard and lacks strength but, owing to the limited local supply of hardwoods, this tree is of some importance for furniture and other specialized uses in the immediate area. Red maple and silver maple are eastern species. Red maple ranges from Newfoundland to western Ontario, while silver maple is concentrated mainly in southern Ontario and southwestern Quebec. Their wood is weaker and softer than that of the hard maples and these trees are not important timber producers. The Manitoba maple, ranging from Ontario across the southern parts of Manitoba, Saskatchewan and southeastern Alberta, produces a soft, moderately light wood that is low in strength. It is better known as a shelterbelt tree.

There are three species of larch in Canada. Two of them — eastern larch, better known as tamarack, and western larch — have commercial value. Tamarack is widely distributed from Newfoundland to the British Columbia-Yukon border and reaches far into the Northwest Territories. The wood is used for poles, posts, piling, boxes, crates and pulp. Western larch, found mainly in southeastern British Columbia, is one of the important timber-producing trees of western Canada. The wood, being hard and strong, is used mainly in construction but is also made into flooring, interior and exterior furnishings, and pulp.

Other trees of less commercial significance include oak, ash, beech, elm and basswood. Valuable as the wood of these species may be, it is usually obtainable in limited quantities only. However, the species may have considerable local importance and they also contribute greatly to the forest landscape.

Canada's better known species are the commercially exploited trees, but in the forest all species have a role to play in maintaining the ecological balance, controlling water run-off and preventing soil erosion, and also in providing a habitat for native fauna and recreational facilities for all who wish to enjoy them.

10.1.1.4 Land use

The Lands Directorate of the Department of the Environment is responsible for investigating national aspects of land use in terms of management, research, planning and environmental concerns.

The Canada Land Inventory is representative of work undertaken by the Evaluation and Mapping Branch. Under federal-provincial agreement all settled lands of Canada have been classified according to their capabilities for agriculture, forestry, recreation and wildlife. These data are used for land-use planning at the regional level. A computer system has been designed to facilitate use of this information for planning purposes.

The Land-Use Studies and Land-Use Planning branches are involved in work where there is specific federal or national concern from a lands and environment viewpoint. Significant trends in the use of land, the impact of federal programs on these trends, the implications for sustained productivity from the national land resource, and land-use policy implications are areas receiving increased attention. Multi-disciplinary and intergovernmental approaches are normally taken.

10.1.2 Forest depletion

The average annual forest depletion by cutting and fire is shown in Table 10.2 for the 10-year period 1963-72. The primary sources of Canada's current wood production are the areas of Crown forest land allocated to wood production and private forest land. These two ownerships constitute 404.8 million acres. On a volume basis, it was estimated in 1968, that the annual permissible allowable cut to maintain our forests, was 8,481 million cu ft. In the 10-year period from 1963 to 1972, average annual utilization of wood harvested amounted to about 4,000 million cu ft or about half the allowable cut. In addition to cutting and fire, extensive forest depletion is caused by insects, diseases and natural mortality but no reliable estimates of these losses, either physical or economic, are available.

A large surplus of timber exists in Canada although there are shortages in some regions and in some species which could be overcome by increased silvicultural and management techniques. Also, greater utilization of individual trees and of certain species could further extend the resource.

A total of 8,227 forest fires occurred across Canada in 1972, destroying 1.9 million acres of valuable forest land (Table 10.3). Despite a 7% increase in fire occurrence, acreage burned was held slightly below that for the 10-year (1962-71) average. However, the two most significant features of the 1972 season were the heavy damages and high fire-fighting costs; both showed an increase of 60% over the corresponding averages for the previous decade.

Through carelessness and incendiarism, man has been blamed for 69% of all forest fires reported in 1972 (Table 10.4). Lightning accounted for 2,524 fires or 31% of the annual total.

10.1.3 Forest administration

10.1.3.1 Federal forestry programs

The federal government is directly responsible through several departments and agencies for the protection and administration of forest resources in the Yukon Territory and Northwest Territories and on other federal lands such as the national parks, Indian reserves, military areas, and forest experiment stations. In addition, there are important federal responsibilities with respect to the nation's forest resources as a whole. These responsibilities, which relate to forestry research and development and the provision of information and technical services, are defined and established by the Forestry Development and Research Act (1966) and the Department of the Environment Act (1970).

The primary federal organization concerned with forestry is the Canadian Forestry Service of the Department of the Environment. Its program covers seven categories: forest policy and program planning; production forestry; environmental and amenity forestry; background research; operations; extension services; and international forestry.

To promote improved management of forest resources and better forest products, the Canadian Forestry Service, through publications, workshops, seminars, etc., disseminates technical information to forest resource and wood processing managers. Forest advisory services are provided for federal departments and international agencies, and assessments are also made of operational trials and treatments conducted by resource organizations and industry. In the forest products field, special testing services (unavailable commercially) are provided both for government and industry. The Service also participates in the development of codes and specifications for forest products.

Through its publications, press releases, films, displays, visitor centres and demonstration areas, the Service seeks to increase public awareness and understanding of forest values and to enlist support in the protection and wise use of the forest resource.

10.1.3.2 Provincial forestry programs

All forest land in provincial territory, with the exception of the minor portions in national parks, federal forest experiment stations, military areas and Indian reserves, is administered by the respective provincial governments; the forestry program of each is outlined below.

Newfoundland. The forest resources of this province are geographically separated by the Strait of Belle Isle into two distinct regions — the island of Newfoundland and Labrador on the mainland. The extent of the resource in Labrador is not fully known and is now the subject of a forest inventory which will be completed within the next year. Previous estimates show that, of a total area of 112,826 sq miles in Labrador, approximately 21,000 sq miles are considered productive forest land. The total volume of wood in Labrador has been estimated at 60 to 70 million cords of black spruce and balsam fir. A forest inventory of the island of Newfoundland shows that of a total area of 43,359 sq miles, over 14,000 sq miles are classified as productive forest. This area supports a total gross volume of 99.5 million cunits of softwoods and hardwoods. The principal commercial species of trees are black spruce and balsam fir. White pine, white spruce, and white and yellow birch are of lesser commercial importance.

Forty-nine percent of the productive forest lands on the island has been leased to the pulp and paper industry while 37% remains under the direct jurisdiction of the province. Tenure of the remaining 14% is varied and includes federal and provincial parks, areas held under fee simple grants and municipal ownership.

Responsibility and authority over Crown forests in the province are vested in the Forestry Division of the Department of Forestry and Agriculture. The Division employs more than 200 professional, technical and support staff. Four regions and 13 district offices undertake the operational field work of forest protection, timber surveys, permits, enforcement, scaling, silviculture and forest management. Headquarters at St. John's performs planning and administrative functions. A new forest policy of increased utilization on a sustained yield basis, backed by legislation and forest management, is being implemented following an exhaustive study of all aspects of forestry in the province.

The forest industry in the province consists of two pulp and paper mills located at Grand Falls and Corner Brook, a liner board mill at Stephenville, and a particleboard plant at St. John's. In recent years the sawmill industry has shown signs of expansion but it still falls short of satisfying provincial lumber consumption. The total forest industry is estimated to contribute approximately \$150 million annually to the gross provincial product.

Forest research is principally carried out by the Canadian Forestry Service of the federal Department of the Environment. Post high school education in forestry is available at Memorial University of Newfoundland and at the College of Trades and Technology (CTT). Memorial University offers a two-year diploma course in forestry and is affiliated with the forestry faculty of the University of New Brunswick. At the CTT students may obtain a diploma after successfully completing a two-year forest technology course.

Prince Edward Island. Roughly 45% of Prince Edward Island's 2,184 sq miles of land area is tree-covered. The wooded areas consist of scattered patches throughout the province with the greatest concentration being in the eastern section. All woodland is privately owned except some 50 sq miles of provincially owned forest land.

The Forestry Branch of the Department of Agriculture and Forestry administers all forestry matters in the province — reforestation, protection, extension and woodlot

improvement. The reforestation program has been expanding yearly with emphasis on the genetic improvement of the white spruce. As the program progresses, the genetic improvement program will be carried out on all commercially important tree species.

Nova Scotia. Of Nova Scotia's land area of 20,402 sq miles, 17,159 sq miles are classed as forest and most of the forest land is considered suitable for regular harvesting. Although 91% of the forest land in Canada is held by the Crown in the right of the federal and provincial governments, only 22% is so held in Nova Scotia.

Provincial Crown lands are administered by the Department of Lands and Forests through a staff of foresters and rangers. Extension personnel assist owners of small private woodlands. The Department administers the Lands and Forests Act as it pertains to all lands and is responsible for forest fire suppression. Forest fire detection is facilitated through 35 observation towers and an aerial patrol service with one helicopter and six fixed-wing aircraft. In 1974, 579 fires burned 4,473 acres of forest. Five fires exceeded 100 acres, and the largest covered 1,529 acres. Fire suppression crews and rangers with equipment are stationed throughout the province.

The forest industry is of prime importance to the economy of Nova Scotia, contributing directly or indirectly around \$130 million to the gross provincial product annually. There are in operation some 414 sawmills of various types and sizes, one hardboard mill, two newsprint mills, one groundwood pulp mill and one chemical pulp mill. These mills accounted for 36 million cubic feet (MM cu ft) of sawlog materials, and consumed just over 85 MM cu ft of pulpwood in 1973, excluding nearly 9 MM cu ft of pulp chips from sawmill residues. In addition, 6.4 MM cu ft of pulpwood were exported and 480 M cu ft of pit props, poles and pilings were produced.

The reforestation program has been active since the 1930s. Experimental work on container planting, direct seeding, soil capability and site preparation continues and efforts are being made to improve seed sources. Total softwood inventory as at July 1974 was 13 million seedlings and transplants, and 1.6 million trees were planted.

Timber, pulpwood and Christmas trees are sold through public tender, and cutting on Crown lands is done under recommendation of resource managers of the Department of Lands and Forests. Management cruises, regeneration studies and experimental cuttings are conducted on Crown lands and a program of operating these lands under long-term, integrated-use management plans is under way. During 1973-74, 3,695 acres of Crown forest were thinned and improved, bringing the total acreage of Crown silvicultural treatments to 40,495 since 1965.

The provincial forest inventory, a continuous system designed to operate on a seven-year cycle, was in its last year in 1973 and the second inventory cycle had commenced. In the second cycle the province will be covered in 10 years. Aerial colour photography, begun on Cape Breton Island in 1969, is being extended to the remainder of the province. Remeasurement of a system of 1,750 permanent sample plots was started, and is providing continuing data on growth and drainage.

Forest research is carried on by federal government agencies and by the Nova Scotia Research Foundation. Investigations cover stand improvement, tree nutrition, cutting methods, and insect and disease activities. Extension projects include fire prevention, a province-wide motion picture program, distribution of information on forest and wildlife conservation, promotion of the Christmas tree industry, a hunter safety program, woodlot improvement, preparation of material for the mass media, and technical assistance to sawmill operators.

New Brunswick. Of the total land area of New Brunswick (27,835 sq miles), approximately 87% is classed as forest land suitable for regular harvest of which the Crown, in right of the province, owns about 46%. About 2% is owned by the federal government and the remainder is privately owned. The total volume of standing timber in the province is estimated at 20,400 MM cu ft; coniferous species make up 70% and deciduous species the remainder.

Protection from forest fires, the first requirement for forest conservation, is mainly the responsibility of the Department of Natural Resources which also carries out duties in connection with game management and protection, mines, water, and the administration of provincial Crown lands. A large-scale aerial spraying program to protect balsam fir and spruce

from the spruce budworm has been carried on since 1952 by a Crown company sponsored by the federal and provincial governments and by representatives of the forest products industries. Forest management licences authorize operators to cut and remove forest products in accordance with forest management plans and cutting permits. Royalty is paid to the province when products are cut by the licensees.

New Brunswick does not maintain a forest research organization but co-operates with the Canadian Forestry Service in that field. The University of New Brunswick has also undertaken a small number of forest research projects in co-operation with the National Research Council, the provincial government and other interested organizations.

In the field of education, the University of New Brunswick offers undergraduate and graduate courses in forestry leading to BScF and MScF degrees. It is also responsible for the administration of the Maritime Forest Ranger School in conjunction with the governments of New Brunswick and Nova Scotia and with private industry. The forest extension services of the University assist both government and private agencies in the direction and planning of various forestry extension programs. The provincial Department of Agriculture and Rural Development also provides an expanding extension service to the owners of farm woodlots.

Quebec. Forests with economic potential cover 298,000 sq miles, about 50% of the total area of the province. This forest cover stretches northward to an irregular line near 52°N on the east and 54°N on the west of the province. The forests may be divided into two separate tenure groups — private forests and public forests. Private forests cover an area of 27,900 sq miles. Public forests cover 270,300 sq miles of which 180,200 sq miles are under management; of the remaining 90,000 sq miles, 31,600 sq miles are considered highly productive although still inaccessible. Public forests carry a volume of almost 93,900 MM cu ft of standing timber of various species; private forests contain 16,600 MM cu ft. Coniferous species make up 78% of the total volume. Public forests under management and private forests supply the pulp and paper mills and the sawmills of Quebec. Private forests account for about 25% of the annual cut (about four million units). Quebec forests account for approximately 25% of the gross provincial product.

Management of public forests and assistance to private forestry is carried out by the Forestry Branch of the Department of Lands and Forests which controls development and the use of woodlands, and undertakes conservation measures. Principal management controls are: the annual inventory of some 30,000 sq miles of forest land; study and regulation of silvicultural practices for this area and the zoning of the land for its best use; and restoration of lands destined for forestation by replanting or by proper treatment — to achieve this Quebec maintains some 100 million plants in nursery stock. Regulations governing the use of the forests cover operational control, the issuance of permits for establishment of mills and cutting permits, measurement of wood harvested on Crown land, aid to development of private forests, and building and maintenance of forest roads. Through regional conservation groups, this Branch is responsible for forest protection against insects, fire and fungus attack.

Ontario. Forested land in Ontario amounts to 166,884 sq miles, of which 166,075 sq miles are classified as forest land bearing or capable of bearing timber of a commercial character suitable for regular harvest and not withdrawn from such use. About 90% of this forest land is owned by the Crown, administered and managed by the Ontario Ministry of Natural Resources through three main programs: Land Management, Outdoor Recreation and Resource Products.

Principal Divisions with their constituent Branches are: Forests (Forest Research, Forest Management, and Timber Sales); Mines (Geological, Mineral Research, Mineral Resources, Mines Engineering); Fish and Wildlife (Commercial Fish and Fur, Fish and Wildlife Research, Sport Fisheries, and Wildlife); Parks (Historical Sites, Park Management, Park Planning); Finance and Administration (Administrative Services, Financial Management, Information, Legal Services, Northern Affairs, and Personnel); Lands (Lands Administration, Land Use Co-ordination, and Surveys and Mapping); Field Services (Air Service, Forest Fire Control and Engineering Services). There is also a Conservation Authorities Branch and a Policy Research Branch. In order to serve the public more effectively through decentralization to regional and local levels, four groups are established within the Ministry: Resources and Recreation, Lands and Waters, Northern Ontario and Southern Ontario. The first two groups

are primarily concerned with policy development while the others are primarily concerned with policy implementation.

The Forest Management Branch is responsible for the regeneration, tending and improvement of the forests on Crown lands, Agreement Forests and private land under The Woodlands Improvement Act. In addition, it has the task of promoting forestry on privately owned lands through its extension program. The Branch operates 10 forest tree nurseries (with supporting tree seed collection, treatment and storage plant) with a current production target of about 79.1 million trees. Complementing this are up-to-date tree improvement and nursery soil management programs. The Branch, directly or indirectly, supervises all planting projects on Crown lands but regeneration agreements have been signed with all major licensees under which the latter assume responsibility for planting projects and are paid at an agreed rate for work completed. Other work, such as site preparation for planting, may be performed by the companies under the same agreement.

During 1973, 47.0 million nursery-produced trees were planted on about 62,500 acres of Crown and Agreement lands, and 4.8 million tubed seedlings were planted on about 4,800 acres. Other silvicultural treatments included the direct seeding of 25,100 acres, treatment for natural regeneration on 41,600 acres and stand improvement (cleaning, spraying, thinning, pruning, etc.) on 64,100 acres. In all, 280,700 acres of Crown and Agreement lands were silviculturally treated in 1973 to promote regeneration or to improve the forests. Owners of private lands may purchase planting stock for forestry purposes from government nurseries at nominal prices and may also receive free professional advice on any forestry matter, including silviculture, harvesting and marketing. In 1973 (spring and fall), planting stock furnished for private lands totalled 18.2 million units. Under The Woodlands Improvement Act it is possible to have planting and improvement work carried out completely under government direction and mainly at public expense. Since its inception in 1966, the program has provided assistance for 161,300 acres of privately owned land.

For half a century, Ontario has had enabling legislation that permits municipalities and, within the past 20 years conservation authorities, to place abandoned and submarginal agricultural lands to which they have acquired title under agreement with the Ministry, which undertakes to plant and manage the properties for a specified period of between 20 and 50 years. Over 254,000 acres under such agreements are managed intensively and the older plantations are receiving regular thinnings. The trees removed are in demand for pulpwood, posts, poles and sawlogs, making the undertakings financially attractive. In addition, properties close to centres of population have acquired tremendous value as recreational areas. Forest pest problems in 1973 were again dominated by the spruce budworm which infested almost 19 million acres, but spraying operations to control this insect were limited to 90,000 acres in three separate high-value local areas. Smaller acreages on Crown lands and lands managed under agreement totalling 12,000 acres were also treated for white pine weevil, pine and spruce sawflies, white grubs, white pine blister rust, annosus root rot, and mice.

The Forest Research Branch provides scientific and technical knowledge for the management of forest lands and is more specifically oriented toward assisting forest management in attaining production targets. Various disciplines including tree ecology and physiology, site and fertilization, tree genetics and breeding, mensuration, silviculture, pest and fire control, economics, equipment design and development are used in combination to solve management problems such as tree improvement, stock production, regeneration and forest tending. Research is carried out throughout Ontario. Headquarters is at Maple and there are four field stations at Thunder Bay, Sault Ste Marie, Dorset and Midhurst.

The Timber Sales Branch co-ordinates and supervises preparation of management plans for Crown management units and approves the plans prepared for company management units. Forest inventory requirements and priorities for such plans are determined by the Branch. As at March 31, 1974, 179 plans (88 Crown units, 31 company units and 60 Agreement Forests) were completed or in process of completion for about 190,000 sq miles. Forest access is most important in the implementation of management plans and the planning of access roads is part of the Branch's responsibilities. The Branch arranges for the orderly sale and disposition of timber and the measurement (scale) of the products removed. Sawmills are licensed and directories prepared. Information is collected and analyzed on the production, transportation and marketing of timber and the data provided to the forest industry.

The Forest Fire Control Branch is responsible for the area under organized forest protection in Ontario totalling 200,000 sq miles and including the main central band of accessible forests. This area is organized into eight regions and 38 districts. An additional 11 administrative districts are located south of this area in the highly developed agricultural counties where municipalities are responsible for fire control. The vast inaccessible areas to the north of the fire districts, totalling over 114,000 sq miles, do not support significant stands of merchantable timber and, except for the protection of private property and human life, are not normally protected. Within the fire regions, agreements were in effect in 1974 with 209 municipalities for the prevention and control of forest fires. An agreement was also in effect with the federal government for fire protection of 968,968 acres of Indian lands in the province.

Organized forest fire detection is accomplished primarily by aerial patrols with a limited amount of backup detection provided by two or three lookout towers in areas of high value (e.g. Algonquin Park). Public reporting of forest fires (unorganized detection) continues to be an important and very necessary part of the over-all detection program. The basic fire-fighting strike force comprises 135 trained five-man fire crews and 39 fire-bombing aircraft. These forces, with the aid of timber operators, municipal fire brigades and the general public in some instances, provided initial attack on 1,625 fires that occurred in 1974. The Ministry of Natural Resources owns 43 aircraft, most of which can drop either long-or short-term retardant on fires. Fire-bombing aircraft provided initial attack on 306 of the 1,625 fires; however, fixed-wing aircraft were used on 648 of the fires. Ministry and hired aircraft dropped 7.8 million gallons of water and almost 2.2 million gallons of long-term retardant on fires during 1974. Rented helicopters were used on 323 fires during the summer of 1974. The communications system included a network of ground stations, radiotelephones, fireline radios, aircraft radios, portable aircraft radiotelephones, Telex and facsimile.

Manitoba. The administration of provincial Crown forest lands in Manitoba is the responsibility of the Department of Mines, Resources and Environmental Management which consists of a Field Operations Division, an Operational Policy Division, a Mines and Departmental Services Division, an Environmental Management Division and a Water Resources Division. A special planning section is charged with developing short- and long-range forestry plans and programs relating to the forest inventory, timber utilization and industrial development, reforestation, silviculture and forest protection.

The Research Branch of the Environmental Management Division undertakes the necessary practical research for the qualitative development of these programs and the various projects and activities within them. The Branch co-operates with several federal services which maintain two research areas in the province and works closely with federal authorities in investigating and controlling forest damage resulting from insects and diseases.

The Field Operations Division is charged with implementing forestry programs and projects developed. It also provides considerable input with respect to plans developed for specific areas within the four regions into which the province is divided, each headed by a regional director responsible for the field administration of the forests and other resources in the region. The Operational Policy Division is responsible for administering the Forest Act and Regulations. Policy guidelines, programs and procedures are established by the Policy Division which co-ordinates control measures for the propagation, improvement and management of the forests, for the harvest of forest products, and for forest inventory surveys. A provincial forest nursery is maintained to supply stock for reforestation of denuded Crown land and some natural seed areas have been established for nursery stock. Seedlings are supplied to farmers for woodlots and to commercial Christmas tree producers; an average of more than 4 million are planted each year in reforestation projects on Crown lands. Conventional planting programs are being reduced and reforestation of cutover lands is being achieved by scarification and seeding. The program of forest stand improvement comprises thinning, clearing and chemical spraying to remove undesirable species and encourage growth of preferred trees. Forest inventories cover about 10,350 sq miles annually and, on the basis of these inventories, working plans with annual allowable cuts on a management unit basis are in operation.

Timber-cutting rights are awarded by forest management licences, timber sales and, in certain cases (particularly for salvage operations), by timber permits. Forest management

licences may be granted for periods of up to 20 years and are renewable; timber sales may be for varying periods from one year upward and timber permits for periods of up to one year. In 1974 one long-term pulpwood berth with an area of 2,745 sq miles was in force. A second long-term pulpwood berth agreement was signed in 1966, covering the construction of a pulpmill and sawmill at The Pas in northern Manitoba.

There are 128,370 sq miles of the province under forest protection with zones of priority established in the less accessible areas. Fires are detected through a comprehensive network of lookout towers and supporting air and ground patrols. Approximately 90,000 sq miles are covered by aerial patrols.

Public education in the fields of fire prevention and forest conservation is carried out through extensive use of radio, television, newspapers, pamphlets, signs, film tours and talks. The Mines and Departmental Services Division provides accounting and clerical services for the other two divisions, and is responsible for issuing permits, licences and leases relative to forestry projects and activities.

Saskatchewan. The forests of Saskatchewan cover 136,000 sq miles of which 44,500 sq miles are productive forest land and are suitable for regular harvest. Provincial forests constitute approximately 96% of all forest land in the province and are managed and developed by the Forestry Branch of the Department of Tourism and Renewable Resources.

The Forestry Branch, consisting of three sections — forest management, inventory and silviculture — develops and evaluates forest policies and management programs which are carried out by the various regional administrative authorities. For purposes of resource administration, the province is divided into seven regions, each administered by a director. The regions are subdivided into conservation officer districts which vary in size according to resource base and population to be served. Close liaison is maintained between the Forestry Branch and the various regional authorities.

The Department of Northern Saskatchewan administers approximately the northern three quarters of the forested area of the province. The Fire Control Division of the Resource Development Branch of this Department is responsible for development of techniques in prevention, detection and suppression of forest fires. Both departments maintain a forest protection capability in each of their regions.

A network of 75 lookout towers equipped with two-way radios is maintained throughout the province and is supplemented by aircraft on regular patrol duty during high-hazard periods. The Department of Northern Saskatchewan communication system is being converted to VHF. Two-way radio sets, operated in towers, vehicles, aircraft and bush camps, are used for the detection and suppression of forest fires; helicopters and fixed-wing aircraft capable of water-dropping provide aerial support. Outside help may be requested when available and necessary.

Alberta. The 148,167 sq miles of forest lands in Alberta include 106,755 sq miles which are considered productive. The Alberta Forest Service of the Department of Lands and Forests through its six Branches (Administration, Timber Management, Forest Protection, Construction and Maintenance, Land Use and Training) is responsible for their administration. Jurisdiction is decentralized into 10 Forests, each responsible for the forest area within its boundaries. Each Forest is under the control of a superintendent supported by specialists in the fields of timber management, fire, land use, construction and communications, as well as by other clerical and casual staff. These Forests are further subdivided into Ranger Districts under a district forest officer responsible to the superintendent. District officers may have several assistant rangers in addition to other staff under their charge.

The Timber Management Branch is responsible for implementation and supervision of the timber quota system, acceptance and approval of management and annual operating plans prepared for leased and licensed Crown lands, preparation and execution of forest management plans and disposal of Crown timber. The Branch also carries on silvicultural programs, processes applications, takes inventories of forest resources, inspects cutting areas to ensure proper logging and utilization practices and collects dues and fees.

The Forest Protection Branch is in charge of all phases of protection including prevention, detection and suppression of wild fires. This Branch includes a number of specialists such as a meteorologist, a telecommunications officer and an Aircraft Dispatch Section to assist in the

over-all protection program. The Construction and Maintenance Branch constructs and maintains all road, airstrip and building facilities within the area of the Service's jurisdiction and administers and operates three licensed public airports.

The Forest Land Use Branch is responsible for the planning and supervision of proper land-use practices in the forested area including grazing, recreation and watershed management, particularly on the east slopes of the Rocky Mountains containing the North and South Saskatchewan rivers. The Forestry Training Branch provides facilities and instructions for the second year of a two-year forest technology course given by the Northern Alberta Institute of Technology. It also conducts in-service training programs for all the branches in the Forest Service and other divisions of the Department.

Basic research in all phases of the forestry program is generally carried out by the Canadian Forestry Service. A new federal research laboratory has been completed in Edmonton to improve the research service that is provided.

British Columbia. Over 210,394 sq miles or 60% of British Columbia's total area, is inventoried as forest land. This includes over 276 MM cu ft of mature merchantable timber, most of it coniferous species. Ninety-five percent of the provincial forest land is publicly owned and managed by the British Columbia Forest Service, the forest administrative agency for the province. For administration and management purposes, the province is divided into six forest districts with headquarters at Vancouver, Kamloops, Nelson, Williams Lake, Prince Rupert and Prince George. Further decentralization of authority is effected by subdivision into over 100 ranger districts. Each district is supervised by a forest ranger who supervises the harvesting of trees by logging companies and plays a vital role in environmental protection. Eleven directional, servicing or policy-forming divisions constitute the head office of the Forest Service at Victoria: Timber, Reforestation, Protection, Inventory, Research, Engineering, Personnel, Information, Accounts, Range and Special Studies.

Efforts continue to bring BC's forest resources under sustained-yield management even though with an annual scale of approximately 21,219,120 cunits (1974) the total inventory would appear sufficient to support current needs in perpetuity. One of the results of sustained-yield administration has been the swinging of a greater proportion of the annual forest harvest to the interior of the province; in 1974, the wet belt forests on the coast accounted for about 46.4% of the total forest cut and the interior for 53.6%. For all practical purposes, the entire interior forest is publicly owned; a large proportion of the privately owned, leased or licensed forests is on the coast. Several systems of timber disposal are in effect. The Tree Farm Licence is a contract between the government and a company or individual whereby the latter agrees to manage, protect and harvest an area of forest land, including any privately held forest land, on a sustained-yield basis. Tree Farm Licences are subject to re-examination for renewal every 21 years. Public Sustained-Yield Units are areas within which the Forest Service manages the Crown timber on a sustained-yield basis. Within the Public Sustained-Yield Units, recognized established logging operators can apply for Timber Sale Licences or Timber Sale Harvesting Licences which entitle them to log at a given rate per year, based on a number of factors including the operator's average rate of production at the time the unit was established.

Forest fire prevention techniques and organization for effective forest fire suppression are vital aspects of planned sustained-yield management. Extensive use is made of aircraft under various terms of contract. Air tankers and fire-spotter aircraft are employed during the fire season and helicopters and other aircraft are employed under contract for patrol duties and for the transport of fire suppression crews. The rugged topography and the many remote and sparsely populated areas of the province demand the availability of a variety of transportation methods to achieve early discovery of and attack on forest fires.

Close liaison with the Canadian Forestry Service of the federal Department of the Environment through facilities at Victoria provides detailed information on insect and fungal enemies of the forest and on fire research.

In order to achieve an orderly and efficient administration of multiple use of Crown forest lands, the Forest Service, in conjunction with other government departments, has recently developed the "Integrated Use" concept. The Forest Service recognizes that inevitably some forest lands will be withdrawn from timber production to accommodate other users. These losses must be offset by increased production on the remaining areas.

10.1.4 Statistics of the forest industries

This Section is concerned with the many industries engaged in the felling of timber and its transformation into a variety of products required in modern living. The extensive forests of Canada provide raw materials for several large and growing primary industries: sawmills and planing mills, shingle mills, veneer and plywood mills, particleboard plants and pulp and paper mills, which in their turn provide raw materials for a wide range of secondary industries that convert the products of the primary industries into more highly manufactured goods such as sash, doors, millwork, wooden boxes, furniture, converted papers and paper goods. However, much of the output of the primary forest industries is exported; the sawmill industry and the pulp and paper industry, especially, contribute substantially to the value of the export trade of Canada and thereby provide an important part of the foreign exchange necessary to pay for the imports from other countries. Statistics of manufacturing activity and total activity of the wood industries and the paper and allied industries will be found in Chapter 17.

10.1.4.1 Logging industry

The forests of Canada provide the raw materials for its sawmills and planing mills, shingle mills, veneer and plywood mills, particleboard plants and pulp and paper mills as well as roundwood for export in the unmanufactured state and other products such as fuelwood, poles and piling, fence posts, mining timber and Christmas trees. Tables 10.5 and 10.6 give the estimated quantities of wood cut in Canada, by province and by type of product, for 1970-72. The total volume of wood cut increased slightly from 4,227 MM cu ft in 1971 to 4,384 MM cu ft in 1972.

10.1.4.2 Wood industries

The standard industrial classification subdivides the wood industries group into the following industries: sawmills and planing mills, shingle mills, veneer and plywood mills, sash, door and other millwork plants, hardwood flooring mills, manufacturers of prefabricated buildings, manufacturers of kitchen cabinets, wooden box factories, the coffin and casket industry and miscellaneous wood industries. The latter group is further subdivided into the wood preservation industry, the wood handles and turning industry, particleboard, and miscellaneous wood industries.

The sawmills and planing mills, the shingle mills, the veneer and plywood mills and the particleboard plants (the latter are included in the miscellaneous wood industries group) use mainly roundwood as a raw material and sometimes are called primary wood industries; they are dealt with separately below. The other industries, which constitute the secondary wood industries, further manufacture part of the production of the primary wood industries into a great variety of products. However, most of the production of the primary wood industries is not further processed.

Sawmill and planing mill industry. Lumber is by far the most important single commodity in this industry and British Columbia is the most important province in this field. The total value of shipments of establishments classified to this industry in 1972 amounted to \$1,893.6 million of which lumber accounted for \$1,631.7 million; shipments of lumber from British Columbia amounted to \$1,115.7 million (Tables 10.7 - 10.8).

In addition to the lumber produced by the sawmill and planing mill industry a small amount is produced by establishments classified to other industries bringing total lumber production in Canada in 1972 to 13,985 MMfbm compared with 12,735 MMfbm in 1971.

Shingle mill industry. Most of the shingles and shakes produced in Canada are from British Columbia mills. All establishments in this classification reported shipments of 2,217,983 squares of shingles and shakes valued at \$56.0 million in 1972. British Columbia alone accounted for 1,995,206 squares valued at \$52.3 million. However, it should be mentioned that considerable quantities are produced by establishments classified to other industries and by individuals intermittently operating one or two shingle machines or producing shingles by hand; although no adequate measure of this production is available it is known to contribute significantly to the total. Of the total production in 1972, 2,704,000 squares were exported, of which 2,697,676 squares went to the United States.

Veneer and plywood industry. The production of hardwood veneer and plywood in Canada is confined largely to the eastern provinces and the production of softwood veneer and plywood

almost entirely to British Columbia. For the latter, Douglas-fir is most commonly utilized because of the availability of large-diameter logs of this species from which large sheets of clear veneer can be obtained. Of the hardwoods, birch is by far the most important species. Although most of the raw materials for this industry are of Canadian origin, some decorative woods are imported, particularly walnut.

Most of the production of softwood veneers is further manufactured into softwood plywood by Canadian mills. Some of the hardwood veneers are also shipped to other veneer and plywood mills in Canada for further manufacture or to other industries such as the furniture industry for veneering purposes but a significant portion is exported. Total exports in 1972 amounted to 1,488.2 MM sq ft valued at \$43.4 million, of which 1,400.8 MM sq ft valued at \$37.0 million went to the United States.

Most of the plywood is consumed in Canada although exports are important. In 1972 these amounted to 54,526 M sq ft of hardwood plywood valued at \$8.5 million and 448,321 M sq ft of softwood plywood valued at \$44.5 million. The greater part of the exports of hardwood plywood went to the United States (9,435 M sq ft valued at \$1.1 million) but most of the softwood plywood exports went to Britain (311,770 M sq ft valued at \$31.0 million). Quantity and value of veneer and plywood shipments for 1970-72 are given in Table 10.9.

10.1.4.3 Paper and allied industries

The Standard Industrial Classification subdivides the paper and allied industries group into the following industries: the pulp and paper industry, the asphalt roofing manufacturers, the paper box and bag manufacturers, and other paper converters. Statistics of manufacturing activity and total activity of the paper and allied industries group are given in Chapter 17.

Pulp and paper industry. This industry is by far the most important of the group. For many years it has been the leading industry in Canada contributing about 2% of the total gross national product and 11.0% of the total value of the country's exports in 1972. In that year there were 141 pulp and paper mills in operation.

These mills consume enormous quantities of roundwood: 16,427,158 cunits with a cost value of \$585.7 million was used in 1972. In that year, 157,083 cunits of pulpwood were imported and 493,560 cunits were exported. In addition, pulp and paper mills use wood residues of the sawmill and other industries for pulping such as cores of peeler logs, slabs and edgings or wood chips, shavings, and recently, sawdust. The total of such wood residues used by the industry in 1972 amounted to the equivalent of 8,436,883 cunits of pulpwood valued at \$222.7 million. The industry also consumes large amounts of electric power, chemicals and other goods and services and requires large quantities of clean water.

Some of the production of the pulp and paper industry is consumed in Canada or serves as a raw material for the paper-using or secondary paper and allied industries and certain other industries but a great part of it is exported, particularly newsprint and various types of pulp, most of it to the United States. Some plants included in the pulp and paper industry classification also convert basic paper and paperboard into more highly manufactured papers, paper goods and boards but their output represents only a small part of Canada's total production of converted papers and boards. Table 10.10 gives shipment and production figures for pulp and Table 10.11 gives shipments of basic paper and paperboard for 1970-72. Table 10.12 shows exports of pulp and newsprint for 1970-73.

Asphalt roofing manufacturers. These establishments produce composition roofing and sheathing, consisting of paper felt saturated with asphalt or tar and, in some cases, coated with a mineral surfacing. Their total shipments in 1972 were valued at \$62.6 million.

Paper box and bag industries. These industries include manufacturers of folding cartons and set-up boxes, manufacturers of corrugated boxes and manufacturers of paper bags. Their total shipments in 1972 amounted, respectively, to \$215.2 million, \$345.3 million and \$211.0 million, compared with \$195.9 million, \$299.9 million and \$205.1 million in 1971.

Other paper converters. This group produces a host of paper products such as envelopes, waxed paper, clay-coated and enamelled paper and board, aluminum foil laminated with paper or board, paper cups and food trays, facial tissues, sanitary napkins, paper towelling and napkins, toilet tissue, etc. The total value of manufacturing shipments of this industry in 1972 amounted to \$453.0 million compared with \$416.4 million in 1971.

10.2 Fisheries

The federal government has full legislative jurisdiction over the coastal and inland fisheries of Canada and all laws for the protection, conservation and development of these fisheries resources are enacted by Parliament. The management of fisheries is, however, shared with provincial governments to which certain administrative responsibilities have been delegated.

The federal Department of the Environment through its Fisheries and Marine Service, exercises responsibility for the management of all fisheries, both marine and freshwater, in Nova Scotia, New Brunswick, Newfoundland, Prince Edward Island, the Yukon Territory and Northwest Territories. In Ontario, Manitoba, Saskatchewan and Alberta the management of all fisheries is conducted by the provincial governments. In Quebec, the provincial government manages both marine and freshwater fisheries but the inspection of fish and fishery products produced for sale outside the province is carried out by the federal Department of the Environment, as it is in all other provinces. In British Columbia, the fisheries for marine and anadromous (fish that migrate to the sea from fresh water) species are managed by the Department of the Environment but the provincial government manages its freshwater fisheries. In the national parks the fisheries are managed by the Canadian Wildlife Service, Department of the Environment.

In most instances, licences for sport fishing are distributed by the respective provincial governments which retain all revenues so collected. Sport fishing licences in the Yukon Territory and Northwest Territories are issued by the federal Department of the Environment.

The mutual interest of federal and provincial governments in fisheries problems is recognized in the undertaking of joint studies and programs, frequently on a regional basis. Regional committees have been established in recent years for periodic discussion. Four groups have evolved: the Federal-Provincial Atlantic Fisheries Committee (consisting of representatives from the federal government and from New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island and Quebec); the Federal-Provincial Freshwater Fisheries Committee (representatives from the federal government and Ontario, Alberta, Manitoba and Saskatchewan); the Federal-Provincial Ontario Fisheries Committee; and the Federal-Provincial British Columbia Fisheries Committee. Sub-committees make recommendations for industrial development, research and marketing problems. The main committee in each case co-ordinates, where practicable, all activities in the respective fields of responsibility of its members and suggests means of carrying out fisheries programs and projects of common concern. These include the development of methods and techniques in the catching of fish and of shore and plant facilities, and studies of the economics of fisheries to ensure that any proposed program of development is soundly based.

10.2.1 Federal government activities

The work of the federal government in the conservation, development and general regulation of the nation's coastal and freshwater fisheries is performed by the Fisheries and Marine Service which incorporates the scientific staff and establishments formerly administered by the Fisheries Research Board.

The Fisheries and Marine Service. Canada's Fisheries and Marine Service, a major component of the federal Department of the Environment, undertakes a broad range of responsibilities and activities related to the aquatic environment and the living resources of ocean and inland waters. These include: management of Canada's ocean and inland fisheries; hydrographic surveying and charting of navigable coastal and inland waters; administration of small craft harbours; fisheries and oceanographic research contributing to the understanding, management and optimum utilization of renewable aquatic resources and marine waters; environmental impact studies affecting coastal and inland waters and research in support of international agreements relating to fisheries management and marine environmental quality.

Jurisdiction over fisheries is exclusively federal under the British North America Act, 1867, although administrative responsibilities have been delegated over the years to some provinces.

Functions of the Fisheries and Marine Service are grouped under two major units: Fisheries Management, and Ocean and Aquatic Affairs, each headed by an Assistant Deputy Minister reporting to a Senior Assistant Deputy Minister. Co-ordinated by a small corps of

senior staff officers at headquarters in Ottawa, the Service carries on most of its programs at regional and field locations from coast to coast. Regional headquarters for Fisheries Management are located at Vancouver, BC; Winnipeg, Man.; Quebec, Que.; Halifax, NS; and St. John's, Nfld.; and for Ocean and Aquatic Affairs at Victoria, BC; Burlington, Ont.; and Dartmouth, NS. Research institutes and laboratories are located at a number of centres across Canada.

In addition, several appointed public corporations and boards are involved in activities closely aligned with those of the Fisheries and Marine Service, including the Fisheries Prices Support Board, the Canadian Saltfish Corporation and the Freshwater Fish Marketing Corporation.

International fisheries. Many of the deleterious effects of man on his aquatic resources are outgrowths of historical practice, insufficient knowledge, multiple uses of water, social and economic conditions, and national and international competition. Problems under national control are corrected as conditions warrant but many resources are shared with other nations and must be managed jointly.

Canada co-operates with many other nations in obtaining scientific data and formulating management proposals required to ensure the rational development and conservation of fisheries of common concern through membership in ten international fisheries commissions and one international council. These international organizations are established under the terms of formal conventions and assume responsibility for the investigation of specific living marine resources in the defined areas to which the terms of the respective conventions apply. Canadian representatives on these international bodies are appointed by Order in Council and include officials of the Department of the Environment and members of the fishing industry. Canada is a party to the following: the Convention between Canada and the United States of America for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea; the Convention between Canada and the United States of America for the Protection, Preservation and Extension of the Sockeye Salmon Fisheries in the Fraser River System (pink salmon added subsequently by protocol); the International Convention for the High Seas Fisheries of the North Pacific Ocean; the Interim Convention on Conservation of North Pacific Fur Seals; the International Convention for the Northwest Atlantic Fisheries; the Convention on Great Lakes Fisheries between Canada and the United States of America; the International Convention for the Regulation of Whaling; the Convention between the United States of America and the Republic of Costa Rica for the Establishment of an Inter-America Tropical Tuna Commission; the International Council for the Exploration of the Sea; the International Convention for the Conservation of Atlantic Tunas, and the Canada-Norway Sealing Commission.

As evidence of its support for international consultation and co-operation in fisheries, Canada maintains active membership in the Committee of Fisheries of the Food and Agriculture Organization of the United Nations and in the Codex Alimentarius Commission which is concerned with world food quality standards.

In addition to co-operating with other nations to conserve high-seas fisheries resources through international agreements, Canada has taken further action to protect the in-shore fisheries in the coastal areas by establishing a 12-mile territorial waters limit and certain defined fishing zones. Canada excludes from these areas the fishing vessels of other nations except those having traditional fishing interests. Agreements have been concluded with Denmark, France, Norway, Portugal and the United Kingdom on the phasing out of fishery operations within Canadian territorial sea and fishing zones. Canada also enters into bilateral agreements as necessary to overcome specific fisheries problems.

10.2.2 Provincial government activities

Newfoundland. The provincial Department of Fisheries is concerned mainly with improvement and development of fishing and production methods. It conducts experiments and demonstrations in new designs of fishing gear as well as the modification of existing types, the construction of multi-purpose fishing craft and the exploration of potential fishing grounds with a view to increasing catching efficiency.

Loans are made to processors for the establishment and expansion of fish processing plants and for deepsea draggers. Aid to fishermen for the construction of modern vessels

capable of a greater variety of fishing operations and larger production is provided by loans from the Newfoundland Fisheries Loan Board. The Fishing and Coasting Vessels Rebuilding and Repairs (Bounties) Act, 1958 authorizes financial assistance in maintaining and prolonging the life of the existing fleet. The Coasting Vessels (Bounties) Act, 1959 authorizes the granting, for locally built ships, of a maximum bounty of \$150 a ton for vessels of between 100 and 400 gross tons. The Fishing Ships (Bounties) Act, 1970 authorizes the payment of a bounty of \$200 per registered gross tonnage on boats 10 tons under deck up to 150 tons which are built under permit. An In-shore Fisheries Assistance Programme provides a bounty of \$10 a foot on boats measuring from 20 to 30 ft and \$12.50 a foot on boats measuring 31 to 35 ft. Bounties are also paid to fishermen on certain types of synthetic fibre fishing nets and lines.

Other services include advising fishermen on gear and equipment, industrial research and plant construction and engineering. The Fisheries Salt Act, 1957 and the Fishing Salt Regulations, 1969 authorize rigid control over the sale and distribution of fisheries salt.

The inland waters of Newfoundland, although they provide excellent sport fishing, are not commercially exploited. The lakes and ponds actually remain under the authority of the Department of Tourism but, under federal-provincial agreement, these waters, including rivers and streams, are under federal control in matters of conservation and guardianship.

Prince Edward Island. The sea and inland fisheries of Prince Edward Island are administered by the Fisheries Service of the federal Department of the Environment. The provincial Department of Fisheries supplements federal activity in this area and is concerned principally with quantifying and, within the terms of the provincial role in fisheries management, maximizing returns, both social and economic, to those engaged in the fisheries industry. The Department provides technical assistance and, in conjunction with the federal fisheries organizations, engages in experimental and developmental work in such fields as fishing methods, resource inventories, statistical studies and management assistance.

Loans are made available to fishermen and the fishing industry through the Prince Edward Island Lending Authority, a Crown corporation established in 1969, which is empowered to grant credit in the sectors of fisheries, industry, tourism and agriculture. Provincial responsibilities concerning freshwater fisheries are discharged by the Fish and Wildlife Division of the Department of Environment and Tourism.

Nova Scotia. The fishing industry in Nova Scotia is of major importance to the province's economy. Landed value of fish in 1974 was approximately \$80 million while the market value was in the order of \$175 million. Additional calculations reveal that annual household income generated by the fisheries is in the vicinity of \$200 million including the "spin-off" industrial effect from boat building and repair, gear manufacturing, etc. Fish products account for more than 30% of Nova Scotia's exports. Over 11,500 fishermen and 4,500 plant workers are directly employed in the industry and 125 fish processing plants are in operation. The provincial government maintains a constant contact with federal authorities responsible for resource management and assists in establishing and implementing developmental policies and programs.

Nova Scotia's Department of Fisheries concentrates most of its own efforts in the areas of resource and product development, industrial development, and field services. The Resource Utilization Division organizes and conducts exploratory fishing for new resources and is responsible for examining and evaluating new and improved gear and techniques. It also provides assistance and incentives to create a viable aquaculture-mariculture industry. In the product development sector assistance and advice are given to industry in efforts to develop and market new products. It also assesses product potential and supplies market intelligence expertise, consults with purchasers, develops and monitors processing methodology and assists in developing quality control practices. The program is strategically oriented to the developing, promoting and proving of new products from non-utilized and underutilized species, as well as the development and promotion of products from these species.

The Department is also involved with the federal government's ARDA III Program which provides funds to assist with upgrading of fish plants and facilities. Loans are also made available to fishermen and processors through the Nova Scotia Resources Development Board, a branch of the Nova Scotia Department of Development. The Department operates a Fisheries Training Centre in Pictou with live-in accommodations and all necessary training

aids. A program of short courses, known as the "outport courses", is provided by mobile units which are rotated in selected coastal communities throughout the province. The principal areas of instruction are navigation, engines (gas and diesel) and nets and gear. The Department is expanding its training program to encompass all sectors of the industry from processors to deck hands and ships' cooks. In 1974 the Fisheries Department hired field representatives to improve communications between fishermen, industry and government and to assist fishermen in dealing with technical and business management problems. They live in rural fishing communities, inform fishermen about government programs and ensure that fishermen and industry take part in formulating fisheries policies.

New Brunswick. Commercial fishing is one of the most important industries of New Brunswick employing about 5,163 fishermen, with annual earnings of \$22 million, and 5,600 plant workers. The annual marketed value of all fish and shellfish products is about \$90 million of which about 80% is exported to the US. New Brunswick's commercial fisheries, both tidal and inland, are under the legislative jurisdiction of the federal government, while angling in Crown waters is the responsibility of the provincial Department of Natural Resources. However, the New Brunswick government plays a major role in resource assessment and development, fisheries training, financial assistance to the industry and long-term planning. The Department of Fisheries and Environment has a highly qualified staff of biologists, engineers and naval architects, grouped into six branches. Close liaison is maintained with other federal and provincial departments and agencies concerned with the fishing industry of the province.

The Fish Inspection and Marketing Branch administers the New Brunswick Fish Inspection Act and Regulations although for greater effectiveness and to avoid duplication of personnel, arrangements have been made with the federal Department of the Environment to cover this activity. The Branch actively promotes the expansion and modernization of existing fish processing plants and the establishment of new plants in the province. The Branch is carrying out a program of product development in an effort to increase the added value of its catch, and another program is aimed at promoting the consumption of fish within the province. Its efforts include studying existing markets and developing new ones for fishery products at home and abroad in collaboration with other government agencies.

The Research and Development Branch carries out programs in co-operation with the federal Department of the Environment. Technical and financial assistance is made available to the provincial department for projects undertaken toward modernizing fishing and processing methods, experimenting with new types of fish-catching equipment and demonstrating its operation to fishermen, and exploring and developing unexploited or under-exploited species of molluscs, crustaceans, fishes and seaweeds. This work has resulted in the establishment of snow crab, shrimp, Irish moss, tuna, sea urchin and eel fisheries in New Brunswick.

The newly created Fisheries Training Branch provides technical training to fishermen and plant personnel. Training is also provided for managerial and supervisory personnel. The Branch operates a School of Fisheries at Caraquet in northeastern New Brunswick where, in the 1973-74 academic year, 420 fishermen took training in the various phases of their trade.

The Fishermen's Loan Board of New Brunswick, a provincial corporation operating under the jurisdiction of the Minister of Fisheries and Environment, was established in 1946. It now operates under the Fishermen's Loan Act of 1952 and the Regulations of November 1, 1963. The Board consists of two major branches: the Loans Administration Branch and the Boat Building Branch. Both branches have three sections; the former includes the credit, accounting and field staff sections (which covers all the coastal regions of the province); the latter consists of the vessel inspection, evaluation and contracts section. The Board's main function is to make loans available to the fishing industry of the province for modernizing and developing the fishing fleet. It does this by providing adequate financial assistance at moderate rates of interest to fishermen, either as individuals or associations, processing firms and corporations to build modern fishing vessels, to finance major repairs, and to purchase engines and equipment.

The Loans Administration Branch investigates loan applications, assesses their economic viability, secures loans with insurance and legal documentation, maintains the accounts, and collects the repayment. The Boat Building and Repairing Branch studies, inspects, modifies

and approves plans and specifications of the many types and classes of fishing vessels financed by the Board.

Since the Board's inception, it has granted 2,827 loans to New Brunswick fishermen for a total of over \$44.1 million. Outstanding loans amounted to \$19.6 million at the end of March 1974. Loans are repayable within five to eight years on most small in-shore fishing vessels. Repayment schedules on large trawlers may extend to 15 years based on the gross proceeds of the catch. Others are on a 15-year annual instalment contract. Most of the new fishing vessels being built for fishermen and processing firms in the province are financed by the Board. The Board acts as agent for Environment Canada's financial assistance program which makes funds available to owners of new fishing vessels not eligible for the shipbuilding subsidy granted by the Department of Industry, Trade and Commerce.

Sport fishing contributes substantially to the economy of the province. Great Atlantic salmon rivers like the Miramichi, the Restigouche and the Saint John are known around the world for their prolific production of this majestic game fish and attract many thousands of tourists to the province each year. Anglers catch as many as 50,000 salmon a year in the Miramichi system alone. Many other species are also sought by both residents and non-residents in the hundreds of streams, rivers and lakes of the province.

Quebec. In 1974 Quebec fishermen landed 117 million lb. of fish and shellfish in the vast reservoir formed by the St. Lawrence River, gulf and estuary. The landed value to the fishermen was \$13.5 million and the market value of the produce reached \$30 million, compared with \$17 million five years earlier.

The industry is very important to the economy of the Magdalen Islands, the lower North Shore and the Gaspé peninsula. There are about 5,000 commercial fishermen, including 500 full-time coastal fishermen, 700 sea-going helpers and 600 officers and crew operating the seiners, long-liners and draggers. Thirty processing plants employ about 1,700 workers (seasonally adjusted). Fishermen and shipowners build and repair their fishing vessels within the region, thus giving employment to shipyards. Local labour is also used for building and maintaining the various marine installations necessary for docking, safety and discharge of cargo, for operating ice-making plants, and in freezer and storage operations.

In 1974 redfish (34.3%), cod (28.0%) and herring (15.2%) made up 77.5% of the total catch. In terms of value, the proportions were: cod 32.0%, lobster 17.4%, redfish 14.4% and shrimp 9.9%.

The Quebec sea-going fishing fleet includes 150 wooden or steel-hulled vessels of between 15 and 450 net registered tons; 3,355 craft of all types are engaged in the coastal fishery. The government has tried to modernize the ocean-going fleet through grants and construction loans for the building of a 132-ft steel seiner and prototype 65-ft container-seiner also steel-hulled, as well as seven wooden long-liners and draggers.

Government aid to the commercial fishery consists of loans for building or refitting of vessels, grants toward acquisition of coastal craft and fishing gear, and a wide range of technical assistance. The Commercial Fisheries Branch allocated \$1.2 million during the year in grants for boat-building, the purchase of fishing gear, collection of catch from coastal fishermen, land-based teams, marketing assistance and marine insurance. Interest-free loans amounting to \$2.2 million were approved for construction and repair of fishing vessels.

The main objectives of the Commercial Fisheries Branch under the Canada-Quebec Agreement of 1968 (renegotiated in 1971) were a more efficient use of funds from the private as well as government sectors and concentration of fisheries in centres with well-equipped port facilities. Under the terms of the initial Agreement, \$4.8 million was budgeted for infrastructure related to ocean-going fisheries, and this amount was increased to \$10 million in the Agreement as renewed. The program is expected to reach its full rate of growth in 1975.

In the Gaspé region, five production centres have been set aside, three of which will be developed as industrial fisheries complexes at Rivière-au-Renard, Paspébiac and Grande-Rivière for specialized production, with secondary production centres at Newport and Sandy Beach. In the Magdalen Islands, three centres have been set aside—an industrial complex at Cap-aux-Meules and secondary production centres at Havre-Aubert and Grande Entrée. Landing points will supplement these centres, providing coastal fishermen with unloading and storage facilities. They will not have processing plants on site but will be linked by a fish transportation system to the nearest production centres. The Commercial Fisheries Branch

hopes to have landing points completed at Gascons, Cloridorme and Les Méchins in the Gaspé region and Millerand and Étang-du-Nord in the Magdalen Islands before the present Agreement expires.

Sport fishing in the inland waters of Quebec is under the jurisdiction of the Department of Tourism, Fish and Game, which employs 543 full-time conservation officers and issues the required sport-fishing licences. Seven hatcheries are maintained by the Department, where speckled trout, brown trout, rainbow trout, grey trout, ouananiche, maskinonge and salmon are reared for the restocking of lakes and streams.

Excellent fishing may be found in all provincial parks and reserves. Gaspé and Laurentide parks are renowned for trout fishing and the waters of Chibougamau Reserve and La Vérendrye Park, situated on the height of land, abound in pickerel, pike and grey trout. Eleven salmon rivers are open to anglers—the Petit Saguenay, Laval, Moisie, Matane, Cap Chat, Ste. Anne, St. Jean, Matapédia, Dartmouth, Port Daniel and Petite Cascapédia.

A committee made up of directors of the Quebec Wildlife Federation makes recommendations to the provincial government concerning legislation required for the maintenance of satisfactory fishing conditions and other problems arising out of the ever-changing conditions of modern life and their effect on the wildlife of the province.

Ontario. The fishery resources of Ontario are administered by the Commercial Fish and Fur Branch and the Sport Fisheries Branch of the Ministry of Natural Resources under the authority of the federal Fisheries Act, the Ontario Fishery Regulations, the Ontario Game and Fish Act and the regulations connected therewith.

The commercial freshwater fishing industry in Ontario, with a capital value of over \$12 million, produces an annual yield of from 53 million lb. to 72 million lb. of fish including nearly 10 million lb. of bait fish. Fishermen receive \$12 million from the sale of this catch. It is estimated that subsequent handling, processing and servicing of fish will result in a contribution of about \$25 million to the provincial economy. The industry, although widely scattered throughout the province, is centred chiefly on the Great Lakes, particularly Lake Erie. Direct employment is provided for about 1,900 commercial food-fish fishermen and 2,500 bait-fish fishermen directly; many more are employed indirectly. Approximately 900 additional people are engaged in fish handling and processing. The species harvested commercially include yellow perch, smelt, whitefish, pickerel, pike, lake trout, herring, chub, carp, white perch, sturgeon, white bass, bullhead, catfish, eel, goldeye, sunfish, burbot, freshwater drum, rock bass, crappie, sauger and suckers. Over 90% of all fish landed in Ontario are harvested from the Great Lakes. More than 500 smaller inland lakes are commercially fished, mainly those in the northwestern portion of the province.

Fishing methods and equipment have been modernized extensively during the past few years and include the use of diesel-driven steel-hull tugs with depth sounding devices, radar and ship-to-ship and ship-to-shore communications. Knowledge of the fish and their movements is constantly being expanded from biological research findings. Modern icing facilities and transportation methods are in use as well as new types of fishing gear. Programs to develop more efficient and economical fishing and processing techniques have resulted in efficient bulk-handling techniques for smelt and a viable fish-meal plant which produces a marketable product from fish-processing wastes and fish unsuitable for food. Trawling on Lake Erie has proved very efficient in harvesting smelt year-round. Most Ontario fishermen are organized into various local associations and many of these associations are in turn represented by the Ontario Council of Commercial Fisheries which performs important services to the industry.

Ontario has an estimated freshwater area of approximately 68,490 sq miles. Excellent angling opportunities are available for such prized fish as brook, rainbow and lake trout, yellow pickerel (walleye), smallmouth and largemouth bass, northern pike, and maskinonge. Recreational angling is no longer restricted to open water; a wide selection of ice-angling equipment including snowmobile rentals is available and seasons have been extended in many parts of the province for certain species of fish to facilitate winter angling. Annual revenue from the sale of angling licences in 1973 was approximately \$4.5 million. Residents do not require an angling licence. Non-residents (alien) are required to purchase (1974) a seasonal licence at \$8.50 or a three-day licence at \$5 for angling privileges. Canadian residents from

other provinces may fish in Ontario for an annual fee of \$3. The management of this resource is administered by a field staff of conservation officers and biologists.

Ontario operates 16 fish hatcheries and rearing stations; notably for brook, rainbow and lake trout, splake, smallmouth and largemouth bass and maskinonge. The basic aim of the hatcheries is the economic production of high-quality species to sustain and develop recreational fishing throughout the province. Studies are conducted on the improvement of transportation and planting techniques to improve survival and returns to the angler including the use of aircraft and trucks. The marking of hatchery fish by removal of a single fin is providing valuable information on survival of fish stocks and angler success; 150 fish sanctuaries provide protection during spawning. Research programs are directed toward specific fisheries management problems in the Great Lakes and in the smaller inland waters.

Manitoba. Manitoba's interior location belies the importance of its fisheries resources which stem from an abundance of fresh water in about 40,000 sq miles of lakes and streams covering 16% of the area of the province.

In the year ended March 31, 1974, the commercial fishery produced 21.6 million lb. of fish, an 8.0% increase from the 20.0 million lb. of the previous year. The value to the fishermen increased \$4.7 million to \$5.2 million. Lake Winnipeg contributed 7.7 million lb. (36%), followed by northern waters with 4.8 million lb. (22%), Lake Winnipegosis with 4.1 million lb. (19%), Lake Manitoba with 3.1 million lb. (14%), and other southern lakes with 1.9 million lb. (9%). Sixteen species or groups of species normally enter into the commercial catch but only a few species predominate. In 1973-74, whitefish contributed 5.3 million lb., pike 3.1 million lb., walleye (pickerel) 3.7 million lb. and sauger 3.2 million lb. A miscellany of species, primarily suckers and carp, contributed 6.3 million lb. All of the commercial catch is marketed by the Freshwater Fish Marketing Corporation, a federal Crown agency, and is exported mainly to the United States. Gill-nets are the main fishing gear. About 2,030 fishermen were employed during the open-water fishing and 1,774 took part in winter fishing.

Fisheries administration is under the control of the Minister responsible for Lands, Forests and Wildlife Resources and is divided into research, program development and field operations sectors. Field operations are divided among four regional units. Conservation officers enforce both the commercial and the angling regulations and carry out numerous other duties in connection with fisheries management. Professional biologists carry out a continuing program of studies which not only monitor the resource but also extend the knowledge of it. Fish culture plays an important role in fisheries management. Pickerel hatcheries are located on Lakes Winnipegosis and Manitoba. A hatchery is located at Grand Rapids on Lake Winnipeg. A trout hatchery is located in the Whiteshell Provincial Park. Two temporary facilities for collection of spawn are also used.

The sport fishery is an important use of the fishery resource, with walleye, pike, perch and several kinds of trout being the principal sport species. A total of 161,528 angling licences were sold in 1973-74 of which 127,440 were purchased by Canadian residents.

Saskatchewan. Fisheries resources of the province are administered by the Fisheries and Wildlife Branch of the Department of Tourism and Renewable Resources and by the Resource Development Branch of the Department of Northern Saskatchewan. The latter administers the northern Saskatchewan commercial fishery and the former administers the southern Saskatchewan commercial fishery and the provincial sport fishery. The fisheries sections of both departments have head offices in Prince Albert. The management objective is to plan and develop policies and programs to encourage efficient multi-use of the fishery in relation to the interests of various resource-user groups.

During 1973, 2,157 commercial fishing licences were issued to fish 179 lakes. The resulting harvest of 11.1 million lb. was worth \$2.0 million to the fishermen. The industry, although widely scattered, is centred chiefly in the northern half of the province; approximately 75% of the production came from northern waters. In order of market value, the species composition of the catch was whitefish, walleye, pike, lake trout and tullibee.

One shallow saline lake in southern Saskatchewan produced 49,000 lb. of brine shrimp and brine shrimp eggs. These are processed for sale to fish hobbyists. Over 1 million lb. of rough fish harvested from the Qu'Appelle drainage was mostly shipped to Manitoba for animal food. Interest continues to grow in fish farming. In 1973, 1,264 fish farming enterprises

were licensed to raise rainbow trout. The majority of operations were intended for the private use of the owner. About 809,000 rainbow fingerlings stocked in the spring resulted in an estimated 130,000-lb. harvest.

In 1973, 156,197 angling licences were sold. Northern pike, walleye, lake trout, perch, arctic grayling, rainbow trout and goldeye continued to be the principal species taken. A continuous program of inventory of sport fishing stocks is maintained to provide up-to-date information for management purposes. During 1973, 222 waters were examined. Expansion of the exotic species program continued with rainbow trout released in two new waters in 1973. About 100 lakes and streams have established populations of trout and salmon to date.

The provincial hatchery at Fort Qu'Appelle reared 18.8 million fish of eight species for distribution in 158 waters. Walleye was the species most widely distributed, being stocked in 52 waters. Rainbow trout was stocked in 49 waters, brook trout in 32 waters, and lake trout and splake in nine waters.

The limnological and fisheries research program is designed to provide basic information on the productivity of water bodies, to secure information on the abundance and relationship of fish species and to investigate and assess factors affecting fish populations. This information is subsequently used to develop fishery management policies and programs.

Alberta. Commercial and sport fishing are administered by the Fish and Wildlife Division of the Department of Lands and Forests, under the authority of the Fisheries Act (Canada) and the Fish Marketing Act (Alberta).

Production of commercial fish from Alberta's 6,485 sq miles of fresh water for the fiscal year ended March 31, 1974 was 4.6 million lb., a decrease from that of the previous year. The landed value of the catch was \$801,722 compared to \$727,082 in 1972-73 and the market value \$1.43 million compared to \$1.47 million. Lake whitefish is the most valuable species caught commercially and accounted for 75% of the total value but represented only 47% of the total landings. Pike dropped to third place in market value. Tullibee, used primarily for animal food, rose to second place and other species taken in order of market value were walleye, lake trout, ling and perch. A major part of the quantity of fish taken is marketed outside the province, mainly in the United States, by the Freshwater Fish Marketing Corporation.

There were 184,745 angling licences sold in Alberta in 1973-74 of which 180,847 were to residents and non-resident Canadians and 3,898 to non-resident non-Canadians. There were 1,017 Trophy Lake licences and 504 spear fishing licences sold during the same time period. In 1974 a total of 185 lakes were stocked with nearly 7.7 million fish and fish eggs: 75.2% rainbow trout, 19.6% eyed walleye eggs, 2.6% walleye fry, 1.2% lake trout, 1.0% brown trout and 0.4% cutthroat trout. There were 687 private and 24 commercial game fish farm licences issued in 1973-74 and these operations handled 330,000 rainbow trout.

Fisheries in Alberta are administered regionally, with seven fisheries biologists located in various centres of the province and responsible for a specific geographical area. In addition to the regional staff, there is a research group located in Edmonton consisting of two biologists and a technician, as well as an Aquatic Habitat Protection and Development Group consisting of four biologists and one technician.

British Columbia. A Fisheries Office, which was organized in 1901-02 and became very active in fish culture work, building and operating fish hatcheries and instituting scientific research into various fishery problems, was superseded in 1947 by the Department of Fisheries. This was replaced in 1957 by the Department of Recreation and Conservation, with the Marine Resources Branch now being the provincial organization concerned with all marine commercial and recreational fisheries. Administrative and regulatory jurisdiction over the fisheries of British Columbia rests with the federal authority; the ownership of the fisheries in the non-tidal waters is vested in the Crown in the right of the province, as are shell fisheries and marine plant management in tidal waters. The province administers non-tidal fisheries although the regulations covering them are made under federal Order in Council on the advice and recommendation of the province.

The provincial Fisheries Act provides for the taxation of the fisheries and, under civil and property rights, for the regulation and control of the various fish processing plants under a system of licensing. The commercial harvesting of oysters and marine aquatic plants is regulated by provincial permits and licences. Provision is also made for arbitration of disputes

regarding fish prices that may arise between fishermen and operators of various licensed plants. Administration of the Act involves collection of revenue and supervision of plant operations.

Regulation and administration of net fishing in non-tidal waters of the province, including commercial fishing and authority for regulation of the game fisheries in non-tidal waters is vested in the Fish and Wildlife Branch which operates a number of trout hatcheries and egg-taking stations for restocking purposes.

The Branch co-operates closely with the Fisheries Research Board of Canada. The biological research into those species of shellfish over which the province has control, principally oysters and clams as well as marine plants, is conducted by the Fisheries Research Board of Canada at the Pacific Biological Station, Nanaimo, BC, under agreement with the federal and provincial authorities, to encourage the industry to produce better products more economically and to enable the Marine Resources Branch to regulate marine resources so that maximum exploitation may be obtained on a sustained-yield basis.

10.2.3 Statistics of the fishing industry

Canada's commercial fishing industry employs 57,000 persons, either full-time or seasonally, who contribute approximately \$770 million annually to the national economy (Tables 10.13 and 10.14). While the Atlantic Coast fisheries concentrate on such species as cod, redfish, small flatfishes and herring and on shellfish like lobster and scallops, the Pacific Coast fisheries are based principally on salmon and herring. Important supplies of whitefish, perch, pickerel, trout and pike are harvested from the large freshwater lakes of Canada's interior.

Although total fish landings for 1973 decreased by 1.2%, total earnings by the Canadian fishing industry increased 41.3% over 1972 to realize a record market value for 1973 of \$772 million.

10.2.3.1 Fish landings

Canadian commercial landings of fish and shellfish during 1973 declined 1.2% from 1972 to 2,278 million lb. While the Atlantic Coast decreased by 4.4% over 1972 both the Pacific Coast and inland landings increased by 15.1% and 1.8% respectively. The total landed value for Canada increased by 35.8% to reach a value of \$317.4 million (Table 10.15).

Atlantic Coast. Total landings in this region declined for the fifth consecutive year to 1,790 million lb., a 4.4% drop from 1972. Two major factors were the continuing activity of foreign vessels on the continental shelf and the bad ice conditions at the opening of the season in northern areas. In 1973 the Atlantic Coast fishermen received a record \$168 million for their catch as opposed to \$142 million in 1972, an increase of 18.3% (Table 10.16).

Of the total 812 metric tons landed, 61.3% was groundfish landings, an increase of 5.4% over 1972; although cod, a major species in this group, declined 19.4% to 324.5 million lb., it was offset by an increase of 44.1% in the landings of redfish which attained a record high of 349.3 million lb. landed. Haddock, which had been declining since 1968, increased 5.8% over 1972 to reach 33.4 million lb. As a group the 19.2% decrease in pelagic and estuarial landings was mainly due to a 25.6% decrease from 1972 in herring landings to 499 million lb. Lobster landings of 35.6 million lb. increased 7.2% over the previous year with the value to fishermen reaching \$40.5 million or 9.6%.

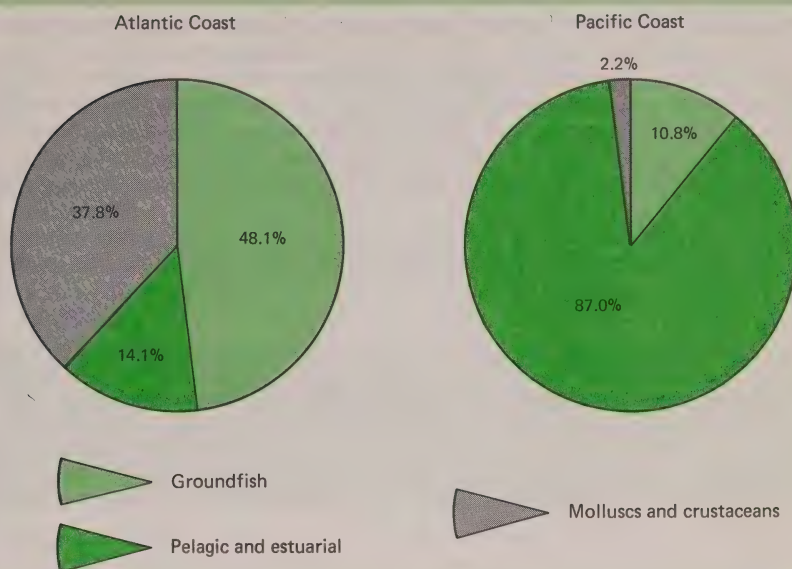
Pacific Coast. The total landings of fish and shellfish of 388.8 million lb. valued at \$130.4 million showed increases of 15.1% in quantity and 73.5% in value as compared to 1972. This record high was due mainly to higher salmon landings.

Salmon landings of 185.2 million lb. were the highest since 1958 and up 12.6% over 1972. Landed value of \$100 million was an all-time high, doubling that of 1972. Of the total salmon catch chum made up 38.9%, pink 15.3%, coho 12.0%, and sockeye 25.5% (an increase of 12.7% over 1972 composition). The scarcity of halibut worsened in 1972 as landings decreased 34.5% to 14.5 million lb.

10.2.3.2 Products and marketing

A record high market value of \$772 million for Canada's fishery products was reached for 1973, an increase of 41.3% over 1972 (Table 10.17). On the Atlantic Coast groundfish showed the largest increase, 37.5%. The most important Atlantic Coast products in terms of value were

Market value share of fishery products, by area and type, 1973



frozen fillets (\$111 million), fresh and frozen shellfish (\$96 million), frozen blocks (\$52 million) and canned fish and shellfish (\$40 million).

The value of marketed products on the Pacific Coast rose 79% over 1972 with salmon and herring showing increases of 98.6% and 401.7%, respectively. In 1973, 1.55 million cases (48 lb.) of Pacific salmon were packed, 32% more than in 1972 reversing the previous decline. Only the production of spring and pink salmon declined while other species increased by between 15.2% (steelhead) and 205.3% (sockeye) (Table 10.18).

The total value of all Atlantic freezing in 1973 increased 40.6% over the previous year as the poundage increased by 5.6%. All species showed price increases averaging 45.5% (Table 10.19).

10.3 The fur industry

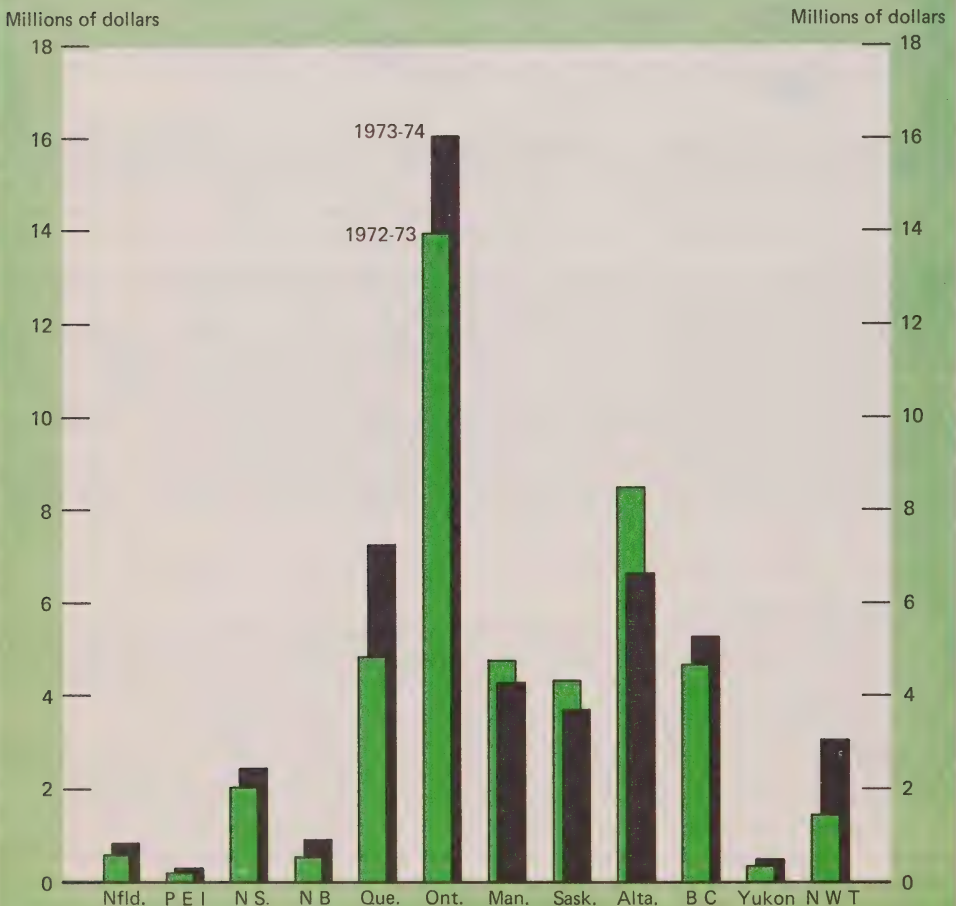
The value of the 1973-74 Canadian production of raw furs amounted to \$52.1 million, made up of \$32.7 million (63%) from wildlife pelts, and \$19.3 million (37%) from pelts produced on farms (Tables 10.20 - 10.21). This is 11.1% above the 1972-73 level of \$46.8 million, an increase resulting from higher values for many types of pelts.

Fur trapping. In 1973-74 the principal producers of wild furs were: Ontario (29.4%), Alberta (15.0%), Quebec (14.7%), Saskatchewan (11.1%) and Manitoba (9.9%). The strengthening trend observed in the previous marketing season was maintained in 1973-74 and throughout the season there was an active movement of furs in all trade channels. Prior to the 1972-73 season, the annual value of production of wild furs in recent years had ranged between \$13 million and \$18 million. Although the relative value of fur trapping in the Canadian economy has declined through the years, returns from this enterprise continue to make an important contribution in the northern areas where wage employment is limited or non-existent.

Managing the fur industry as a renewable resource is of prime importance if the flow of furs is to be maintained. Conservation policies by federal, provincial and territorial governments have been highly effective and statistics, collected since 1919, indicate that production of all the important species is being well maintained. In this connection it should be noted that pelt production figures are not a completely accurate means of assessing the fur-bearer population. The number of pelts taken in any one season depends on many factors including the abundance or otherwise of fur bearers, including cyclic species, plus economic factors such as fur prices and the availability of alternative sources of revenue in the northern areas. Nevertheless, in the absence of any inventory of the fur bearers, pelt production data, maintained over a number of years, provide an indication of the status of the wildlife population. Any long-term decline in numbers would certainly be reflected in progressively smaller catches of any given species. Certainly in no case does the seed stock appear to be endangered.

Since at least 1950 trapline coverage has tended to be incomplete and pelt production figures for many species do not represent optimum harvests. Notwithstanding the imperfect

Value of pelts produced: fur seasons 1972-73 and 1973-74



trapping coverage, pelt production figures in recent years compare favourably with the output in the 1920s and 1930s.

Fur farming. In 1973 Canadian mink ranchers produced 1 million pelts on 531 farms located in all provinces except Newfoundland for a value of \$19.2 million (Table 10.22). The principal producers of pelts, in order of importance, were Ontario (40.3%), British Columbia (17.8%), Alberta (11.4%), Quebec (10.3%), and Nova Scotia (10.1%). The average value of the 1973 pelts was \$18.00, up 12% from the 1972 average of \$16.01. The 1973 production was approximately 2% above the 1972 output, reversing a decline that commenced in 1968. World production of mink has declined and, with mink still the dominant fur of the industry, it is hoped that the more manageable quantities now being produced will result in a continuing firm market situation. Despite steadily increasing production costs, 1973 returns to mink ranchers were only slightly above values prevailing throughout most of the 1950s, and mink ranching remains viable mainly because it has become a vastly more efficient operation in recent years. The trend toward larger enterprises has encouraged the use of labour-saving machinery, and better management practices have put the industry on a sounder economic basis. This, together with a steady improvement in the size and quality of the pelts produced has made it possible to offset at least part of the higher production costs. This improvement in the ranching operation is continuing and, hopefully, future gains in productivity will help to offset costs which can be expected to continue to rise.

The production of ranched fox pelts declined slightly from 1,488 pelts in 1972 to 1,395 pelts in 1973. Average values increased from \$66.60 in 1972 to \$98.39 in 1973, reflecting the strong interest in all long-haired furs.

Chinchilla are also raised on farms in Canada, but because of the small numbers involved the collection of statistics on this species has been discontinued.

Fur marketing. Canada's trade in furs is, understandably, being affected by the increased value of the annual production and the general buoyancy of the world market for furs. In 1973-74 exports of raw furs were valued at \$41.9 million, up from \$41.2 million in 1972-73 (Table 10.23). The principal species exported were mink (\$12.9 million), beaver (\$7.8 million), lynx (\$2.7 million), muskrat (\$3.1 million) and fox (\$4.8 million).

10.4 Wildlife

Wildlife is an important renewable natural resource. The original inhabitants of what is now Canada depended on it for food and clothing and still do in some remote areas. The coming of the Europeans brought development of the fur trade which guided the course of exploration and settlement. When the country was being opened up, a number of mammals and birds became seriously depleted or extinct. As settlement progressed, wildlife habitat was reduced by cutting and burning of forests, pollution of streams, industrial and urban development, drainage of wetlands, building of dams, and other changes in the land.

Today, the arctic and alpine tundra, a major vegetational region, has begun to show serious man-made changes. The adjacent sub-arctic and sub-alpine non-commercial forests have been affected principally by increased human travel which has brought an increase in the number of forest fires, although the great forests farther south retain much of their original character despite exploitation. Arable lands, originally forest or grassland, have completely changed but they have, in some cases, become more suitable than the original wilderness for some forms of wildlife. The surplus of game and fur species available for harvest across Canada is seldom fully utilized and wildlife will remain generally abundant where habitat is preserved and management enlightened.

Today, Canada is known for its varied and abundant wildlife. It maintains most, or all, of the world's stock of woodland caribou, mountain sheep, wolves, grizzly bears and wolverines. These animals exist because of the vast habitat and because of the efforts that have been made to preserve them.

In 1885, the Rocky Mountain Park (now Banff National Park) was established in Alberta, preserving an area of over 2,500 sq miles in its natural state; in 1887, the continent's first bird sanctuary was established at Last Mountain Lake in Saskatchewan; in 1893 when wood bison faced extinction, laws were passed to protect them and a nucleus herd of plains bison was

established at Wainwright, Alta. in 1907. These were among the early attempts at wildlife conservation in Canada.

For a long time, certain species were protected from man and predator. Now, because of better understanding of how nature works, it has been recognized that many factors cause fluctuations in wildlife numbers, and hunting seasons and bag limits are based to a greater extent on environment. Given a fully stocked environment, the annual increase need only replace the losses. Surplus production can therefore be taken by predatory animals or, in the case of game species, by man, without endangering the species.

As a natural resource, wildlife within each province comes under the jurisdiction of the provincial government. However, the federal government does have responsibility for wildlife on federal land and for research and management of migratory birds.

10.4.1 The Canadian Wildlife Service

The Canadian Wildlife Service (CWS) began as an agency to administer the Migratory Birds Convention Act passed in 1917. It was expanded in 1947 to meet the need for scientific research in wildlife management and is now a part of the Environmental Management Service of the Department of the Environment.

The CWS conducts scientific research into wildlife problems in the Northwest Territories, the Yukon Territory and the national parks. It advises agencies concerned with wildlife management and co-operates in carrying out recommendations, advises on and co-ordinates administration of the Game Export Act in the provinces, and co-operates with agencies in Canada and abroad in dealing with national and international problems related to wildlife resources. The Convention on International Trade in Endangered Species of Wild Fauna and Flora was signed by Canada in July 1974. The CWS was designated the Scientific Authority and the Management Authority for the Convention in Canada. The Canada Wildlife Act, passed by Parliament in 1973, provides the federal government and the CWS with a legislative basis for undertaking joint federal-provincial wildlife management programs. Under the Act, the CWS has initiated a rare and endangered species program. Continuing studies on the wood bison, whooping crane and peregrine falcon are to be augmented with new projects on other species. As administrator of the Migratory Birds Convention Act the CWS, in consultation with provincial wildlife agencies, is responsible for recommending the annual revisions of the Migratory Birds Regulations which govern open seasons, bag limits and hunting practices. Enforcement of the Act and Regulations is carried out by the Royal Canadian Mounted Police with CWS and provincial co-operation.

The loss of wetlands to drainage and filling for agricultural and other purposes poses a serious threat to waterfowl. To counteract this the CWS, in co-operation with provincial agencies, began a major program in 1967 to preserve wetlands by purchase or long-term lease. By 1974, 42,000 acres had been bought for \$8 million. The CWS also has charge of 80 bird sanctuaries covering 44,400 sq miles.

The CWS conducts two annual surveys of waterfowl hunters, selected from the 450,000 holders of the Canada migratory game bird hunting permits, to obtain estimates of the species and age of the major waterfowl species taken by hunters. Other continuing projects related to migratory game birds include annual surveys of crop damage in the Prairie provinces and of waterfowl populations and habitat conditions in western Canada, a program to reduce hazards caused by birds flying near airports, and a search for a substitute for lead shot which each year causes lead poisoning and subsequent death of a large number of waterfowl. Bird-banding provides valuable information on the migration and the biology of birds, and is especially useful in waterfowl management. The CWS headquarters in Ottawa keeps sets of continental banding records and controls the activities of banders operating in Canada.

Special attention is being given to species greatly reduced in number or in danger of extinction. By 1974, 21 young had been raised from whooping crane eggs taken from the breeding grounds and incubated at the Patuxent Wildlife Research Center in Maryland. Eventually, the progeny from these 21 chicks will be released into the wild but only after a sufficiently large supply of breeding birds has been developed. In 1974, 16 nesting pairs laid 29 eggs, but only two chicks reached the wintering grounds. The total population by December 1974 was 49, a net increase of one from December 1973.

Research continues on the effects of toxic chemicals on wildlife at various sites across the country. In Alberta, a study continues on the way in which herbicides alter the habitat on which wildlife depends. The results of field work on the relation between chemical contamination of the lower Great Lakes and the breeding success of fish-eating birds were published. Research began on the effects of differing habitat quality and chemical contamination on the reproductive success of common loons in eastern and northeastern Ontario.

Studies continued into the health of game and fur-bearing animals and rodents in northern Canada and into parasitism in these mammals as well as birds. Measures to control anthrax among bison in Wood Buffalo National Park and in the Northwest Territories were again implemented; no outbreaks occurred in 1974.

Under the interpretation program, the CWS operates four wildlife centres across Canada. Wye Marsh Wildlife Centre at Midland, Ont. interprets the Northern Hardwood Biotic Region; Cap Tourmente and Percé Wildlife Centres, both in Quebec, focus on the habitat of the greater snow geese and the natural and human history of the Atlantic gulf coast, respectively; and Creston Valley Wildlife Centre highlights the Columbia Biotic Region. In 1974 planning began for a centre, situated in Saskatchewan, which would focus on the Prairie Grassland Biotic Region.

Research on both the consumptive and non-consumptive use of the wildlife resource is a growing concern. The CWS has participated in several projects which will shed light on the role of wildlife in the social and economic spheres in Canada.

The CWS has been participating in the Canada Land Inventory which is a federal-provincial program to gather information on how land in the settled parts of Canada is being used, and how best it could be used for agriculture, forestry, recreation and wildlife.

10.4.2 Provincial wildlife management

Newfoundland. The functions of the Newfoundland Wildlife Service are: to maintain all indigenous species from extinction; to provide other species where suitable unused habitat exists, bearing in mind the real and aesthetic values of wildlife that are important to man; to maintain all species in the greatest number possible, consistent with the habitat needs of the species and without serious conflict with the other resource needs; and, to provide and regulate the harvest surplus of wildlife populations.

The Wildlife Service manages big game almost solely through varying the hunting regulations based on population data gathered from field studies and hunter questionnaires as well as by transplanting caribou and moose to unoccupied range and controlling predators such as lynx around caribou calving grounds. Black bear, the only other big game species, has increased in numbers over the past six years and a trapping program is currently in progress to gain information on their distribution and movements. Research is also being conducted on the ecology and biology of small game species such as snowshoe and arctic hare, willow and rock ptarmigan and ruffed grouse. Waterfowl management is conducted by federal authorities.

The wild fur industry in Newfoundland, as elsewhere, has been characterized by short-term instability and a long-term decline. However, recent fur sales have set record prices and this suggests that the decline of the past decade may be temporarily halted. The number of trappers in the province is the same as 10 years ago and as a result of continued interest by trappers, research and management studies are being conducted on all fur bearers. Previously, beaver was the only fur bearer benefiting from a management program. Studies are continuing on the biology of the endangered Newfoundland pine marten. It is hoped that these studies will provide the information necessary to produce the management program required to ensure survival of the species.

Prince Edward Island. The Fish and Wildlife Division of the Environmental Control Commission has full or partial responsibility for research and management of all wildlife on Prince Edward Island. All non-migratory wildlife are the full responsibility of the province while the management responsibilities for fish and migratory birds are shared with the federal government. A prime responsibility is the continual monitoring of game populations to assist in setting seasons and bag limits. Attempts are being made to establish a viable population of pheasants by the introduction of new species and continued evaluation of their performance.

A research project on the ruffed grouse is being conducted. Emphasis is on habitat evaluation and populations as they relate to habitat.

Habitat improvement is of prime importance for all forms of wildlife. Fishery management consists largely of the building of fish ladders to facilitate fish passage and other stream improvement measures such as stream bed stabilization. Silting has long been a problem in some Island streams. A pilot project to monitor silt, and to identify and correct its source is being carried out on the Dunk River, one of the largest systems on the Island.

Plans for a joint federal-provincial Atlantic salmon program for the Morell River have been finalized. The four-year development program commenced in the spring of 1975 with an objective of reviewing the Atlantic salmon run and, in turn, the Atlantic salmon sport fishery.

Nova Scotia. The Wildlife Division, Department of Lands and Forests, is primarily concerned with restoring and maintaining a stable and healthy environment to ensure optimum production of wildlife. Land-use planning continues to be an integral component of the program especially as it relates to the management of forest lands. Integrated resource management related to forestry, wildlife and other recreational interests reached varying stages of completion for several extensive areas of Crown land in the province in 1974.

Aside from a number of annual programs conducted to monitor the status of important wildlife species in the province, some specific studies either initiated or completed in 1974 include: development of an aerial census technique for moose; studies of the distribution of the central nervous system parasite in moose and deer; assessment of black bear depredation; determination of reproductive rates of moose and deer; evaluation of an experimental "buck law" in western Nova Scotia; economic evaluation of consumptive and non-consumptive uses of the wildlife resource; effects of certain forest cutting practices on deer and moose; hunter landowner relations; productivity of salt marshes; otter reproduction and population structure; evaluation of the effect of trapping on reproduction and age structure of beaver; and an assessment of wild rice production on dykeland soils.

Acquisition of marshlands and unique coastal areas continued to represent an important phase of the waterfowl management program. A high priority was placed on information and education, enforcement and non-game species management. The Wildlife Division employs a staff of 11 biologists and co-operates with Acadia and Dalhousie universities in a number of research programs.

New Brunswick. The wildlife resources in New Brunswick are the responsibility of the Fish and Wildlife Branch of the Department of Natural Resources. Orders in Council issued under the New Brunswick Game Act provide a means of controlling bag limits and hunting pressure in the utilization of population surpluses for all native wildlife species.

Biological surveys of the more important game animals are carried out throughout the year to determine the current status and condition of population. At the present time principal areas of concern are the management of the following animals and their habitat: moose, white-tailed deer, black bear, beaver, muskrat and woodcock. Some of the most important factors limiting the numbers of big-game animals in New Brunswick are the condition and extent of the winter habitat. A study area consisting of 1 million acres of Crown land has been established in the Bathurst area to evaluate the "multiple-use" concept. Game, fish, recreation and forest management will be integrated to optimize exploitation of all renewable resources in the area.

A New Brunswick Trappers Association endorsed by the Fish and Wildlife Branch has recently been established in an attempt to improve the quality of raw furs. The primary objectives of the Association include the personal involvement of the resident trappers in the wise use and management of the fur resource in the province. The current demand for long-haired furs such as bobcat, fox and fisher has diverted trapping pressure from beaver, otter, mink and muskrat.

Sport fishing contributes substantially to the economy of the province. Atlantic salmon anglers fished an average of 82,358 days to catch an average of 33,303 salmon and grilse each year during the four years 1969 through 1972. The Miramichi River system accounted for 82% (27,509) of the average salmon and grilse angler catch during this period. However, more angler-days are spent and fish caught in NB by anglers fishing for brook trout. In 1970, 1,017,000 angler-days were spent participating in the inland sport fishery including trout and Atlantic salmon angling. Atlantic salmon angling comprised only 8.5% of this total.

Quebec. The management and protection of wildlife within Quebec is the responsibility of the Fish and Game Branch of the Department of Tourism, Fish and Game. The Branch, operating under the Wildlife Conservation Act which is the legal basis for protecting fish and wildlife animal species within the province, consists of five Services. The Wildlife Management Service is responsible for the management of all wildlife and particularly of species of interest to hunters and fishermen. Biologists are assigned to nine districts and their work includes the collection of data on animal populations and habitats in the respective areas. The Wildlife Research Service conducts projects to improve the basic knowledge of fish and wildlife in order to help wildlife managers. The Fish Hatchery Service operates seven hatcheries, inspects commercial hatcheries and controls imports of eggs and salmonids. The Conservation Service is responsible for enforcing fishing and hunting regulations and for informing the public of the scope and importance of such regulations. Finally, the Leasing Service of fishing and hunting rights deals with outfitters and private clubs.

Ontario. Wildlife management in Ontario is administered by the Division of Fish and Wildlife of the Ministry of Natural Resources under the authority of the Ontario Game and Fish Act, the Endangered Species Act, the Migratory Birds Convention Act and the Regulations connected with them. Objectives for this division are to manage the fish and wildlife resources of Ontario so as to provide and encourage a continuous supply of recreational and economic opportunities and to develop public understanding of relevant ecological principles. Within the Division of Fish and Wildlife, the Wildlife Branch and the Commercial Fish and Fur Branch have responsibilities involving wildlife management. Recent decentralization has resulted in the distribution of management functions between main office and eight regional and 49 district offices.

The deer herd in Ontario has experienced a decline during the past few decades, manifested by a southward retraction of about 200 miles in the northern limit of the range of white-tailed deer as well as by a reduction in deer populations throughout the remaining deer range. The primary cause of the decline has been the maturation of the forest following the reduction of logging and fires since the 1930s. Several series of severe winters were instrumental in reducing the deer herd to a size compatible with the reduced range quality. The management program has been aimed at increasing the amount of browse available in winter yards and maintaining suitable winter cover. Moose management is concentrated on production and harvest inventory and evaluation of the effects of various forest practices and conditions on moose range. The number of moose hunters has been increasing and more intensive management measures for moose are being formulated.

In upland game and waterfowl management programs, effort is directed to the maintenance and improvement of habitat as it is habitat which determines the potential wildlife numbers. Management is carried out on areas under agreement between landowners and the province and on provincial wildlife areas. These two categories of wildlife management areas have helped to increase opportunities for nature study and hunting in southern Ontario where most of the land is privately owned. Certain of these areas also ensure preservation of the wetland habitats important to a great variety of wildlife, especially waterfowl. A program to re-establish a wild-breeding population of the giant Canada goose in southern Ontario is continuing and these birds are now to be seen in many places. Waterfowl banding, production surveys and harvest inventory are carried out to assist in developing waterfowl management programs.

The major effort in fur management is directed toward beaver. This involves aerial censuses of beaver colonies and specimen collections by trappers. Monthly summaries of all fur bearers taken by each trapper are now prepared. The harvest of beaver, marten and fisher is controlled by quota. About three quarters of the fur harvested in Ontario is auctioned through the Ontario Trappers' Association Fur Sales Service in North Bay. A concerted effort to develop better and more humane traps was started in 1973 in co-operation with the Ontario Trappers' Association. Workshops on humane trapping techniques, pelt preparation, animal biology and management practices have continued to upgrade trappers' skills and knowledge.

Manitoba. The Manitoba Department of Mines, Resources and Environmental Management is responsible for the management and conservation of the province's wildlife resources. Authority provided by provincial legislation (The Wildlife Act, the Predator Control Act and

Regulations) allows for legal protection and management of the 25 mammal, 160 bird and two reptile species that occur in the province. The federal Migratory Birds Convention Act deals with the protection of migratory game birds, migratory insectivorous birds and migratory non-game birds.

Wildlife authorities manage wildlife, game bird, goose and fur-bearing animal refuges and 41 wildlife management areas. Fourteen new wildlife management areas were established in 1974. The distribution of hunting and trapping pressure by setting definite seasons and bag limits is one management tool utilized. Wildlife habitat acquisition and development are now under the direction of a Habitat Specialist who was hired in 1974.

A five-year Federal-Provincial Agreement was signed in 1974 for the rehabilitation of the Delta Marsh; a full-time Marsh Manager was hired in 1974. Grant's Lake managed hunting area was established in 1974 in order to control the numbers and distribution of hunters in an area of high goose concentrations.

Saskatchewan. The Fisheries and Wildlife Branch of the Department of Tourism and Renewable Resources is responsible for administering and managing the province's wildlife resources. Appropriate legislative authority is provided through the Game and Fur Acts.

The objective of the Saskatchewan wildlife management program is to utilize and develop wildlife resources for the benefit of the residents of the province. The Wildlife Research and Management Divisions of the Branch undertake activities to provide basic information on the resources. More particularly, research projects are undertaken to: determine production of wildlife species; determine habitat conditions for wildlife; investigate effects of land-use practices on the wildlife resources; study limiting factors on wildlife populations; determine diseases of certain wildlife species and their relative importance on wildlife populations; and develop techniques which will facilitate the maximum utilization of the wildlife resource on a sustained yield basis. This information then provides a basis for the over-all wildlife management and development program.

There is a public information program aimed at alleviating the problem of landowner-sportsmen conflict. A federal-provincial agreement has been signed to reduce losses to farmers caused by migratory birds damaging their grain crops; it provides for continuation of wildlife insurance and expansion of the waterfowl lure crop program. In addition, the livestock compensation program provides assistance to farmers for animals allegedly shot by hunters.

The retention of suitable wildlife habitat in the province is a prime requisite to the over-all wildlife management program. A Wildlife Development Fund, financed from an impost on hunting licences, has acquired over 35,000 acres of prime wildlife habitat. To prevent undue reduction of wildlife habitat by intensive agricultural practices, wildlife managers and agriculturalists are developing guidelines that will recognize wildlife consideration in any land improvement program.

Alberta. The management of the fish and wildlife resources of Alberta is under the jurisdiction of the Fish and Wildlife Division of the Department of Recreation, Parks and Wildlife.

The Sam Livingston Fish Hatchery and Rearing Station in Calgary completed its first full calendar year of operation in 1974, and supplied over 7 million fish for the province's stocking program. An Aquaculture Section was established to co-ordinate and provide technical expertise to the developing fish-farming industry of the private sector. Nineteen projects aimed at improving various aquatic habitat characteristics through such techniques as water level stabilization, flow regulation, erection of fish barriers, etc., were undertaken throughout the province by the Habitat Development Section. Fisheries research projects in 1974 included an attempt to establish a homing, self-sustaining population of rainbow trout in the Chain Lakes Reservoir, and an attempt to develop a rainbow trout stocking formula for the pot-hole fisheries. The Habitat Protection Section continued to review applications associated with development projects affecting terrestrial and aquatic resources. The harvest of commercial species in Alberta in 1974 totalled 4.8 million lb., which was approximately equal to the previous year's catch.

During 1974 a Fur Section was formed to map, classify and evaluate Alberta lands for present and potential fur-bearer populations and harvests. The assessment of critical habitat areas for ungulates progressed with the objective of concentrating efforts for habitat protection in these areas. Under the "Buck for Wildlife" program, work continued on 18 habitat

development projects, including those which will benefit ungulates, waterfowl and upland birds. Funds were allocated for the relocation and expansion of the Brooks Bird Hatchery and Research Centre; construction will begin in 1975 a few miles east of the present site. Research projects continued on pheasants, geese, deer and sheep, and a new project was initiated to examine alternative methods to raising wildlife on a reduced and changed land base. This latter research on the game ranching concept will be conducted, in part, at the new Alberta Environmental Laboratory and Research Centre in Vegreville, to be completed in 1978.

British Columbia. The Fish and Wildlife Branch of the Department of Recreation and Conservation is responsible for the protection, enhancement and wise use of the wildlife and freshwater fish resources of British Columbia. Administrative and technical headquarters are in Victoria, with eight regional headquarters in the main centres of population, as well as 44 district offices, three fish hatcheries and a number of permanent field stations throughout the province. The Branch promotes the wise and orderly use of upland birds, game animals and sport fish by licensing hunters and anglers and by determining and enforcing closed seasons, bag limits and other regulatory measures. It licenses and regulates the trapping of fur-bearing animals, the commercial propagation of game birds and fish, the activities of big-game guides and generally acts as manager of the province's wildlife.

Through close contact and liaison with other government agencies and with private concerns involved in mining, forestry, agriculture, water use and transportation, the Branch actively fosters the preservation of a suitable land and water environment for wildlife and outdoor recreation. The Branch enhances the abundance and health of desirable species of animals by the acquisition of key areas of range for big game and waterfowl, by the operation of fish hatcheries and the stocking of lakes and by improving habitat for both fish and wildlife. To increase the understanding of the wildlife resource and provide a proper basis for wise management, it conducts and supports fundamental and applied research on fish and wildlife and their environment.

The Branch's objective is to make a significant contribution to the economy and well-being of British Columbia through wise management of game resources and of non-tidal fisheries. It attempts to maintain British Columbia's waters and lands in a state of continuing productivity through attention to such major matters as pollution and land use and encourages planned or integrated use of lands for forestry, agriculture and wildlife. The Branch also creates public awareness, through programs of education and information, of the values of wildlife resources and of the principles of wise management; protects the resource from unlawful and indiscriminate use and waste; and furthers the rights of the public as a consumer of the wildlife resource.

Sources

- 10.1 - 10.1.2 Information Services Directorate, Department of the Environment.
- 10.1.3 Information Services Directorate, Department of the Environment; provincial returns from respective provincial government departments.
- 10.1.4 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada.
- 10.2 - 10.2.1 Information Services Directorate, Department of the Environment.
- 10.2.2 Supplied by the respective provincial government departments.
- 10.2.3 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada.
- 10.3 Agriculture Division, Industry Statistics Branch, Statistics Canada.
- 10.4 Information Services Directorate, Department of the Environment.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed		certain tables may not add due to rounding

10.1 1973 National Forest Inventory

Province or territory	Forest land <i>sq miles</i>		Non-reserved forest land tenure <i>sq miles</i>			Volume ^a <i>MM cu ft</i>		
	Total ¹	Non-reserved ²	Crown provincial	Crown federal	Privately owned	Soft-woods	Hard-woods	Total
Newfoundland	49,225	48,181	46,259	--	1,922	7,775	1,241	9,016
Prince Edward Island	967	961	47	2	912	136	64	200
Nova Scotia	17,159	16,416	4,002	33	12,381	6,283	2,672	8,955
New Brunswick	24,366	23,877	10,802	83	12,992	14,655	5,793	20,448
Quebec	268,747	268,371	240,161	291	27,919	96,965	33,466	130,431
Ontario	166,884	166,075	148,281	1,603	16,191	91,390	58,269	149,659
Manitoba	52,306	50,923	49,495	397	1,031	12,174	3,584	15,758
Saskatchewan	49,497	47,220	45,078	590	1,552	10,343	7,011	17,354
Alberta	118,692	97,976	94,381	692	2,903	33,638	20,102	53,740
British Columbia	210,394	203,650	193,147	619	9,884	260,375	7,224	267,599
Yukon Territory	89,714	81,200	--	81,200	--	--	--	--
Northwest Territories	211,241	194,600	--	194,600	--	--	--	--
Canada	1,259,192	1,199,450	831,653	280,110	87,687	533,734	139,426	673,160

¹Land capable of producing stands of trees 4" dbh and larger on 10% or more of the area.
²Excludes land in parks, game refuges, water conservation areas and nature preserves, where, by legislation, wood production is not primary.
³Non-reserved inventoried areas only; excludes Labrador, the Yukon Territory and Northwest Territories for which no data are available.
⁴Mature timber only.

10.2 Forest utilization and depletion by fire, 10-year average 1963-72

Item	Usable wood <i>MM cu ft</i>	Percentage of total depletion
Products utilized		
Logs and bolts ¹		
Domestic use	2,400	55.4
Exported	27	0.6
Pulpwood		
Domestic use	1,226	28.3
Exported	92	2.1
Fuelwood (incl. wood for charcoal)	166	3.8
Other products	52	1.2
Total utilization	3,963	91.4
Wastage by forest fires	373	8.6
Total depletion ²	4,336	100.0

¹Includes some wood used in pulp manufacture.
²Excludes losses caused by insects, disease or natural mortality for which no reliable estimates are available.

10.3 Forest fire losses, 1972, compared with 10-year average 1962-71

Item		Average 1962-71	1972
Fires	<i>No.</i>	7,662	8,227
Under 10 acres	"	6,622	6,995
10 acres or over	"	1,040	1,232
Area burned	<i>acres</i>	1,955,209	1,927,444
Merchantable timber	"	389,900	546,230
Young growth	"	622,800	512,498
Cut-over lands	"	81,347	65,572
Non-forested lands	"	861,162	803,144
Estimated values destroyed ¹	<i>\$</i>	13,062,062	20,872,205
Merchantable timber	<i>\$</i>	7,810,016	12,341,825
Young growth	<i>\$</i>	3,574,648	7,020,275
Cut-over lands	<i>\$</i>	251,961	482,246
Other property burned	<i>\$</i>	1,425,437	1,027,859
Actual cost of fire fighting	<i>\$</i>	12,400,120	19,861,312
Total damage and fire-fighting cost	<i>\$</i>	25,462,182	40,733,517
Area under protection	<i>sq miles</i>	1,531,845	1,692,453

¹Excludes such values as damage to soil, stream-flow, wildlife, recreation and tourist facilities.

10.4 Forest fires, by cause, 1972, compared with 10-year average 1962-71

Cause	Average 1962-71		1972	
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
Recreation	1,774	23	1,330	16
Settlement	869	11	877	11
Woods operations	334	4	316	4
Railways	417	6	488	6

10.4 Forest fires, by cause, 1972, compared with 10-year average 1962-71 (concluded)

Cause	Average 1962-71		1972	
	No.	%	No.	%
Other industries	308	4	232	3
Incendiary	324	4	442	5
Miscellaneous known	1,175	16	1,654	20
Unknown	386	5	364	4
Total, man-caused	5,587	73	5,703	69
Lightning	2,075	27	2,524	31
Total, all fires	7,662	100	8,227	100

10.5 Volume of wood cut, Ly province, 1970-72 (thousand cubic feet)

Province or territory	1970	1971	1972
Newfoundland	100,610	82,080	83,170
Prince Edward Island	8,636	7,470	6,640
Nova Scotia	113,853	114,282	115,011
New Brunswick	240,664	243,846	255,161
Quebec	1,020,550	938,690	982,710
Ontario	593,315	559,340	613,100
Manitoba	44,482	54,937	64,800
Saskatchewan	83,880	80,930	93,270
Alberta	146,331	146,129	172,800
British Columbia	1,932,628	1,997,082	1,993,558
Yukon Territory and Northwest Territories	2,941	2,417	3,420
Canada	4,287,890	4,227,203	4,383,640

10.6 Volume of wood cut, by type of product, 1970-72 (thousand cubic feet)

Type of product	1970	1971	1972
Logs and bolts	2,671,355	2,752,727	2,867,942
Pulpwood	1,426,783	1,303,197	1,357,066
Fuelwood	144,649	131,835	119,484
Poles and piling	7,696	5,239	4,276
Round mining timber	3,341	3,044	2,685
Wood for charcoal	1,440	—	—
Fence posts	20,365	12,009	14,327
Fence rails	896	—	—
Miscellaneous roundwood	11,365	19,152	17,860
Total	4,287,890	4,227,203	4,383,640

10.7 Lumber production and shipments and value of all shipments of the sawmill and planing mill industry, by province, 1971 and 1972

Year and province or territory	Lumber		Value of shipments ¹ \$'000	Value of shipments ¹ of goods of own manufacture \$'000
	Production Mfbm	Quantity shipped ² Mfbm		
1971				
Newfoundland	18,367	23,322	2,272	2,850
Prince Edward Island	1,347	1,347	120	— ^a
Nova Scotia	142,593	165,157	16,426	20,056
New Brunswick	282,008	308,818	30,846	52,074
Quebec	1,662,938	1,813,152	160,537	205,103
Ontario	822,626	816,909	88,850	115,752
Manitoba	43,604	49,033	4,152	5,797
Saskatchewan	86,851	131,126	11,548	13,389
Alberta	474,922	546,791	42,905	49,144
British Columbia	8,490,241	8,772,213	801,262	930,623
Yukon Territory and Northwest Territories	5,238	5,279	478	— ^a
Canada	12,030,735	12,633,147	1,159,396	1,395,507
1972				
Newfoundland	13,652	15,140	1,758	2,192
Prince Edward Island	1,415	1,415	119	228
Nova Scotia	153,646	166,178	19,711	23,668
New Brunswick	305,092	337,565	39,003	59,897
Quebec	2,043,382	2,163,952	246,427	303,537
Ontario	885,398	873,919	116,375	144,976
Manitoba	64,329	64,675	6,661	8,567
Saskatchewan	137,606	163,882	19,186	20,799
Alberta	522,260	611,736	66,425	73,979
British Columbia	9,148,707	9,653,782	1,115,667	1,255,284
Yukon Territory and Northwest Territories	3,575	3,469	336	446
Canada	13,279,062	14,055,713	1,631,668	1,893,573

¹Shipment figures contain some duplication because sales of lumber from one sawmill to another are reported as shipments by both establishments.²Confidential.

10.8 Lumber shipments¹ of the sawmill and planing mill industry, by species, 1970-72

Kind of wood	1970		1971		1972	
	Quantity <i>Mfbm</i>	Value \$'000	Quantity <i>Mfbm</i>	Value \$'000	Quantity <i>Mfbm</i>	Value \$'000
Spruce	4,442,106	332,690	5,499,747	463,433	6,677,840	734,549
Douglas-fir	1,671,134	145,941	1,734,079	172,744	1,709,643	205,403
Hemlock	1,986,250	168,499	2,317,156	206,143	2,352,498	259,060
Cedar (red and white)	829,253	91,934	982,225	109,824	987,784	141,905
White pine	208,968	25,991	240,790	29,617	264,594	37,638
Jack pine	338,442	24,903	387,401	31,792	429,270	50,144
Maple	165,610	22,955	170,968	25,524	215,250	38,791
Yellow birch	114,549	15,244	119,734	16,193	129,213	21,838
Lodgepole pine	413,467	28,330	538,503	45,120	660,189	69,799
Balsam fir	203,735	16,654	218,905	19,358	238,031	26,396
Other	584,437	52,217	423,639	39,648	391,401	46,145
Total	10,957,951	925,358	12,633,147	1,159,396	14,055,713	1,631,668

¹See footnote 1, Table 10.7.

10.9 Veneer and plywood shipments, by type, 1970-72

Type	1970		1971		1972	
	Quantity <i>M sq ft</i>	Value \$'000	Quantity <i>M sq ft</i>	Value \$'000	Quantity <i>M sq ft</i>	Value \$'000
Veneer						
Softwoods	1,591,646 ¹	17,494	1,783,303 ¹	23,067	1,904,870 ¹	29,359
Hardwoods	1,150,925 ²	30,973	1,145,897 ²	31,052	1,297,942 ²	38,802
Softwood plywood	1,880,077 ³	150,030	2,096,633 ³	185,860	2,255,371 ³	240,903
Hardwood plywood	323,349 ⁴	31,489	353,631 ⁴	34,322	382,710 ⁴	43,719

¹Basis 1/4".²Surface measure.³Basis 3/4" unsanded.⁴Basis 3/4" sanded two sides.

10.10 Pulp shipments and production, 1970-72

Item		1970	1971	1972
Mill shipments of pulp ¹	'000 tons	6,665	6,419	7,383
	\$'000	913,287	878,132	976,146
Groundwood pulp	'000 tons	324	243	266
	\$'000	20,399	14,688	17,339
Chemical pulps	'000 tons	6,341	6,176	7,117
	\$'000	892,888	863,444	958,807
Pulp production ²	'000 tons	18,308	18,234	19,239
Quebec	"	6,501	6,245	6,496
Ontario	"	3,969	3,800	3,938
British Columbia	"	4,519	4,860	5,044
Other provinces ³	"	3,319	3,329	3,761

¹Includes screenings.²The differences between these figures and the quantities of mill shipments represent the amounts of pulp further manufactured by the reporting companies.³Prince Edward Island is the only province in which there is no production.

10.11 Shipments of basic paper and paperboard, by type and by province, 1970-72

Type and province		1970	1971	1972
TYPE				
Newsprint paper	'000 tons	8,764	8,420	8,962
	\$'000	1,106,688	1,083,225	1,177,177
Book and writing paper	'000 tons	880	906	951
	\$'000	238,232	241,810	261,657
Wrapping paper	'000 tons	484	542	574
	\$'000	102,231	115,391	113,638
Paperboard	'000 tons	1,764	1,815	2,042
	\$'000	268,618	268,280	313,095
All other papers	'000 tons	226	256	319
	\$'000	41,446	43,142	59,627
Total	'000 tons	12,118	11,939	12,848
	\$'000	1,757,215	1,751,847	1,925,194
PROVINCE				
Quebec	'000 tons	5,476	5,326	5,707
	\$'000	802,931	790,685	864,192
Ontario	'000 tons	3,071	3,041	3,160
	\$'000	506,120	510,764	547,112
British Columbia	'000 tons	1,833	1,928	2,025
	\$'000	236,769	247,658	270,569
Other provinces ¹	'000 tons	1,738	1,644	1,956
	\$'000	211,395	202,740	243,321

¹Prince Edward Island is the only province in which there is no production.

10.12 Exports of pulp and newsprint to Britain, United States and all countries, 1970-73

Commodity and year	Britain		United States		All countries	
	Quantity tons	Value \$'000	Quantity tons	Value \$'000	Quantity tons	Value \$'000
Pulp						
1970	377,385	49,540	3,315,519	485,453	5,581,325	785,229
1971	348,912	48,258	3,373,009	480,725	5,241,896	796,334
1972	445,122	60,816	3,497,820	472,861	6,102,175	817,335
1973	383,724	61,506	3,715,188	609,227	6,517,206	1,054,166
Newsprint						
1970	411,665	59,596	6,212,134	872,544	8,090,007	1,110,393
1971	432,788	56,830	6,210,566	880,682	7,797,737	1,084,282
1972	560,615	80,127	6,390,256	933,761	8,101,676	1,157,509
1973	495,140	76,604	6,905,217	1,067,833	8,396,064	1,285,928

10.13 Persons employed in the primary fishing industry, by province, 1972 and 1973

Province or territory	Sea fisheries		Inland fisheries	
	1972	1973P	1972	1973P
Newfoundland	14,452	..	...	...
Prince Edward Island	3,210	..	...	...
Nova Scotia	11,735	..	...	...
New Brunswick	5,067	..	94	..
Quebec	5,277	5,450	566	633
Ontario	...	...	2,097	2,215
Manitoba	...	...	...	1,827 ¹
Saskatchewan	...	...	1,800 ¹	992 ¹
Alberta	...	...	1,547 ¹	370 ¹
British Columbia	9,902	11,117	...	...
Yukon Territory	...	...	87	155
Northwest Territories	...	...	..	114
Total	49,643	...	...	...

¹Fishermen who sold fish to the Freshwater Fish Marketing Corporation.

10.14 Value of all fishery products, by province, 1972 and 1973 (thousand dollars)

Province or territory	1972	1973P
Newfoundland	100,599	144,780
Prince Edward Island	19,964	22,322
Nova Scotia	142,102	175,685
New Brunswick	86,380	89,988
Quebec	25,938	35,478
Ontario	16,238	20,752
Manitoba	} 15,449	16,590
Saskatchewan		
Alberta		
Northwest Territories	159,178	285,052
British Columbia and Yukon Territory ¹		
Total ²	546,138	772,086

¹Includes landings by Canadian fishermen in United States ports.

²The sum of provincial totals differs from Canada total as intershipments between provinces have been removed from the Atlantic Coast.

10.15 Landings of sea and inland fish and other sea products, by province, 1972 and 1973

Province or territory	1972		1973P	
	Quantity '000 lb.	Value \$'000	Quantity '000 lb.	Value \$'000
Newfoundland	650,795	35,723	675,349	47,297
Prince Edward Island	56,847	9,540	62,847	11,243
Nova Scotia	632,537	66,375	615,336	74,956
New Brunswick	357,539	19,923	286,433	22,217
Quebec	183,483	11,138	155,937	12,627
Ontario	43,195	8,119	53,052	10,376
Manitoba	24,479	4,523	22,603	5,041
Saskatchewan	10,725	1,634	8,419	1,625
Alberta	4,856	727	4,611	802
British Columbia ¹	337,508	75,128	388,773	130,409
Yukon Territory	53	27	54	37
Northwest Territories	3,531	839	3,241	809
Total	2,305,548	233,696	2,276,655	317,439
Sea fish	2,208,390	217,131	2,177,654	298,067
Inland fish	97,158	16,565	99,001	19,372

¹Includes halibut landed in United States ports.

10.16 Landings of the chief commercial fish, 1972 and 1973

Area and species	1972		1973P	
	Quantity '000 lb.	Value \$'000	Quantity '000 lb.	Value \$'000
ATLANTIC COAST				
Groundfish	1,045,709	61,225	1,098,382	80,727
Catfish	6,887	334	6,595	360
Cod	402,611	26,154	324,533	29,670
Flounder and sole	279,453	15,125	286,171	19,189
Haddock	31,610	4,511	33,452	6,427
Hake	28,521	1,503	28,674	1,812
Halibut	2,750	1,693	2,720	2,058
Pollock	33,584	1,643	50,022	2,893
Redfish	242,322	9,478	349,300	17,306
Other	17,971	784	16,915	1,012
Pelagic and estuarial	741,580	19,743	599,477	23,597
Alewives	8,297	218	13,103	336
Herring ¹	670,313	12,661	498,953	12,232
Mackerel	35,590	1,307	47,655	2,253
Salmon	3,355	2,130	4,796	3,471
Smelts	2,717	363	3,346	581
Swordfish	--	--	23	2
Other	21,308	3,064	31,601	4,722
Molluscs and crustaceans	75,175	60,430	87,108	63,233
Clams	8,297	903	8,633	1,039
Lobsters	33,185	37,003	35,599	40,568
Oysters	1,988	359	2,251	427
Scallops	12,044	19,508	11,143	16,231
Other	19,661	2,657	29,482	4,968
Other ²	8,418	605	5,296	506
Total, Atlantic Coast	1,870,882	142,003	1,790,263	168,063
PACIFIC COAST				
Groundfish	54,189	16,812	42,317	14,073
Cod (gray)	14,978	1,264	13,269	1,304
Flounder and sole	8,033	599	6,902	706
Halibut ³	22,083	13,684	14,472	10,698
Lingcod	3,629	588	3,277	701
Sablefish	1,622	462	1,435	474
Other	3,844	215	2,962	190
Pelagic and estuarial	268,661	56,093	330,476	113,485
Herring	86,025	2,726	122,630	10,951
Salmon	164,386	50,341	185,204	99,998
Chum	66,544	13,571	72,190	32,670
Coho	20,844	11,052	22,370	18,910
Pink	39,536	6,636	28,462	7,882
Sockeye	20,943	8,983	47,303	26,497
Spring	16,309	10,028	14,755	13,986
Other	210	71	124	53
Other	18,250	3,026	22,642	2,536
Molluscs and crustaceans	14,658	2,223	15,980	2,851
Clams	3,438	382	1,575	196
Crabs	1,976	753	2,580	1,159
Oysters	8,251	702	9,874	875
Shrimps and prawns	794	311	1,729	508
Other	199	75	222	113
Total, Pacific Coast	337,508	75,128	388,773	130,409
INLAND				
Freshwater fish	76,452	15,555	75,314	18,030
Bass	1,769	318	1,512	303
Catfish	842	188	1,021	253
Herring, lake (cisco) and tullibee	4	4	4,859	800
Perch	17,292	4	19,595	5,917
Pickering (yellow)	7,429	2,860	7,294	3,114
Pike	7,902	700	6,758	768
Saugers	3,999	1,213	4,175	1,372
Smelts	4	4	4	4
Sturgeon	4	4	182	149
Trout	1,345	354	1,510	399
Whitefish	18,175	3,811	16,052	4,084
Other	17,699	6,111	12,356	871
Other ⁴	20,706	1,010	23,687	1,342
Total, Inland	97,158	16,565	99,001	19,372
Total	2,305,548	233,696	2,278,037	317,844

¹Includes sardines.²Includes livers and scales; excludes seaweeds and "Other" (seals, whales, oils, etc.).³Includes landings by Canadian fishermen at United States ports.⁴Included in "Other".⁵Sea fish caught inland.

10.17 Market value of all fishery products, by area and species, 1972 and 1973 (thousand dollars)

Area and species	1972	1973P	Area and species	1972	1973P
ATLANTIC COAST			PACIFIC COAST		
Groundfish	177,634	244,306	Groundfish	24,112	20,848
Catfish	1,140	1,262	Cod (gray)	3,428	3,128
Cod	66,656	82,550	Flounder and sole	1,504	1,796
Flounder and sole	42,406	52,796	Halibut ^a	16,904	12,963
Haddock	8,911	12,071	Lingcod	981	1,266
Hake	2,853	3,522	Sablefish	806	896
Halibut	2,365	3,440	Other	489	799
Pollock	4,714	8,292	Pelagic and estuarial	131,232	259,119
Redfish	28,625	55,087	Herring	12,612	34,641
Other	19,964	25,286	Salmon	114,349	221,642
Pelagic and estuarial	69,663	77,308	Chum	30,840	56,554
Alewives	710	695	Coho	16,642	27,863
Herring (includes sardines)	54,452	54,477	Pink	20,642	27,220
Mackerel	3,394	4,234	Sockeye	20,673	69,008
Salmon	3,761	6,841	Spring	14,768	20,533
Smelts	979	1,225	Other	10,784	20,464
Tuna	4,262	7,530	Other	4,271	2,836
Other	2,105	2,306	Molluscs and crustaceans	3,529	4,600
Molluscs and crustaceans	96,308	108,157	Clams	759	393
Clams	2,218	2,626	Crabs	1,318	2,057
Crabs	9,485	15,477	Oysters	934	1,141
Lobsters	55,072	64,712	Shrimps and prawns	412	863
Oysters	585	788	Other	106	146
Scallops	27,452	21,894	Other sea products	259	430
Other	1,496	2,660	Total, Pacific Coast	159,132	284,997
Other sea products	11,076	18,557	Total, Inland	32,325	38,761
Total, Atlantic Coast ¹	354,681	448,328	Total	546,138	772,086

¹Excludes duplication.^aIncludes halibut landed by Canadian fishermen in United States ports.**10.18 Pacific Coast production of canned salmon, 1972 and 1973**

Kind	1972	Value \$'000	1973P	Value \$'000
	Quantity 48-lb. cases		Quantity 48-lb. cases	
Chum	278,451	9,640	423,363	27,561
Coho	83,756	4,464	116,198	9,556
Pink	485,164	20,033	355,695	25,218
Sockeye	312,907	20,499	642,600	63,881
Spring	11,608	464	11,259	776
Steelhead	867	35	999	71
Total	1,172,753	55,135	1,550,114	127,063

10.19 Atlantic Coast production of frozen filets and fish blocks, 1972 and 1973

Area and species	1972	Value \$'000	1973P	Value \$'000
	Quantity '000 lb.		Quantity '000 lb.	
NEWFOUNDLAND	123,780	62,180	133,546	91,294
Cod	53,389	24,659	43,944	32,077
Haddock	405	216	323	241
Redfish	16,620	6,502	29,855	17,041
Flatfish	49,929	29,632	54,044	40,151
Other	3,437	1,171	5,380	1,784
MARITIMES	93,694	43,183	97,596	56,497
Cod	24,187	11,809	17,600	12,098
Haddock	5,526	3,620	6,007	5,802
Redfish	24,155	10,672	35,351	18,235
Flatfish	12,734	7,976	10,142	7,624
Other	27,092	9,106	28,496	12,738
QUEBEC	27,534	10,980	27,750	15,849
Cod	7,382	3,083	5,850	4,201
Redfish	16,491	6,599	19,300	10,193
Flatfish	1,904	1,015	1,545	1,154
Other	1,757	283	1,055	301
TOTAL, ATLANTIC COAST ¹	245,008	116,343	258,892	163,640
Cod	86,837	40,438	68,998	49,550
Haddock	6,082	3,969	6,360	6,068
Redfish	63,281	26,288	90,901	48,601
Flatfish	64,672	38,667	66,698	49,694
Other	24,136	6,981	25,935	9,727

¹Species do not add to the Atlantic Coast totals because of removal of duplication.

10.20 Pelts of fur-bearing animals produced, by province, years ended June 30, 1972-73 and 1973-74

Province or territory	1972-73 fur season [†]			1973-74 fur season		
	Pelts No.	Value \$	% of total value	Pelts No.	Value \$	% of total value
Newfoundland	53,095	580,725	1.2	58,093	845,331	1.6
Prince Edward Island	11,424	156,057	0.3	14,697	259,666	0.5
Nova Scotia	135,340	2,010,788	4.3	158,568	2,416,775	4.6
New Brunswick	30,691	519,159	1.1	51,410	923,837	1.8
Quebec	384,367	4,865,410	10.4	524,785	7,242,988	13.9
Ontario	1,109,807	13,986,830	30.0	1,248,408	16,012,573	30.8
Manitoba	511,183	4,792,621	10.2	347,561	4,283,238	8.2
Saskatchewan	533,577	4,308,231	9.2	307,842	3,729,589	7.2
Alberta	732,791	8,462,463	18.1	532,255	6,628,344	12.7
British Columbia	291,404	4,683,698	10.0	292,944	5,289,747	10.2
Yukon Territory	41,045	339,437	0.7	34,684	499,001	1.0
Northwest Territories	108,249	1,441,798	3.1	232,334	3,067,904	5.9
Canada ¹	3,964,373	46,789,071	100.0	3,840,842	52,063,107	100.0

[†]Totals include pelts and values not allocated to a province or territory, mainly Alaska fur seal and Atlantic Coast hair seal.

10.21 Pelts of wildlife fur-bearing animals taken, by kind, years ended June 30, 1972-73 and 1973-74

Kind	1972-73 fur season [†]			1973-74 fur season		
	Pelts No.	Total value \$	Average value \$	Pelts No.	Total value \$	Average value \$
Badger	5,170	68,131	13.18	5,134	110,507	21.52
Bear						
White	472	289,685	613.74	546	618,024	1,131.91
Black or brown	3,008	146,788	48.80	4,261	221,134	51.90
Grizzly	19	3,230	170.00	27	7,550	279.63
Beaver	452,275	9,912,695	21.92	431,071	9,072,632	21.05
Cougar	35	2,361	67.46	40	3,233	80.82
Coyote	78,148	2,192,763	28.06	87,139	3,169,119	36.37
Ermine (weasel)	82,127	92,413	1.13	55,968	57,463	1.03
Fisher	13,798	508,651	36.86	12,566	613,347	48.81
Fox						
Blue	119	2,520	21.18	208	4,909	23.60
Cross and red	46,318	1,357,775	29.31	63,321	2,650,470	41.86
Silver	392	9,263	23.63	533	24,406	45.79
White	10,146	196,059	19.32	53,415	1,727,350	32.34
Not specified	12,439	346,582	27.86	17,674	859,465	48.63
Lynx	53,400	4,739,826	88.76	35,372	3,071,387	86.83
Marten	61,109	831,745	13.61	62,356	907,428	14.55
Mink	100,049	1,770,456	17.70	68,425	1,143,721	16.71
Muskrat	1,506,810	3,720,005	2.47	1,434,871	3,728,490	2.60
Otter	18,411	828,659	45.01	18,016	739,146	41.03
Rabbit	7,743	784	0.10	15,308	5,719	0.37
Raccoon	61,290	637,136	10.40	73,442	1,075,603	14.65
Seals						
Fur, North Pacific ¹	8,228	373,753	45.42	9,169	432,860	47.21
Hair	94,572	1,155,081	12.21	130,496	1,789,748	13.71
Skunk	224	196	0.88	867	1,283	1.48
Squirrel	291,492	304,770	1.05	183,309	151,700	0.83
Wildcat	3,682	149,116	40.50	4,129	225,095	54.52
Wolf	4,208	217,119	51.60	5,088	230,090	45.22
Wolverine	1,022	86,830	84.96	1,242	105,646	85.06
Total	2,916,706	29,944,392	...	2,773,993	32,747,525	...

¹Commonly known as Alaska fur seal; value figures are the net returns to the federal government for pelts sold.

10.22 Mink farms and value of pelts produced thereon, by province, 1971-73

Province	Mink farms at year-end			Value of mink pelts produced on fur farms (\$'000)		
	1971	1972	1973	1971	1972	1973
Newfoundland	—	—	—	50	—	—
Prince Edward Island	5	6	6	99	84	115
Nova Scotia	109	92	72	1,418	1,685	1,946
New Brunswick	8	7	4	114	104	119
Quebec	49	46	44	1,489	1,689	1,974
Ontario	237	220	201	5,561	6,763	7,738
Manitoba	67	64	55	1,088	1,081	1,200
Saskatchewan	38	34	31	522	607	491
Alberta	57	55	36	1,513	1,791	2,189
British Columbia	103	90	82	2,795	2,940	3,406
Total	673	614	531	14,649	16,745	19,178

10.23 Exports and imports of furs, by kind, years ended June 30, 1972-73 and 1973-74 (thousand dollars)

Kind of fur	1972-73 fur season			1973-74 fur season		
	Britain	United States	All countries	Britain	United States	All countries
EXPORTS						
Undressed						
Beaver	2,045	1,526	9,153	1,300	1,477	7,787
Chinchilla	—	170	197	—	140	186
Ermine (weasel)	57	1	74	57	2	102
Fisher	101	214	601	68	360	663
Fox, all types	511	978	2,953	866	1,388	4,807
Lynx	470	1,506	4,064	308	1,687	2,734
Marten	75	518	913	118	458	760
Mink	1,112	7,294	14,043	870	7,461	12,854
Muskrat	2,765	90	3,342	2,600	61	3,092
Otter	44	69	459	13	39	446
Rabbit	—	14	14	—	33	33
Seal	451	3	1,907	832	—	1,252
Squirrel	227	—	276	179	—	179
Wolf	294	577	1,674	568	466	2,234
Other	423	299	1,489	1,015	541	3,721
Dressed						
Mink	14	22	552	—	38	331
Raccoon	—	14	49	—	1	215
Fur plates, mats, etc.	—	33	88	3	40	143
Other	53	268	841	29	605	1,537
Fur goods apparel	2,226	3,962	24,417	3,134	4,257	28,046
Total	10,868	17,558	67,106	11,960	19,054	71,122
IMPORTS						
Undressed						
China and Jap mink	314	—	526	160	14	750
Fox	1,441	1,716	7,168	1,277	3,253	8,119
Kolinsky	134	—	228	115	19	335
Mink	1,823	4,723	13,560	2,010	6,783	19,940
Muskrat	2	5,679	5,681	—	6,531	6,531
Persian lamb	76	79	528	—	14	207
Rabbit	—	10	21	28	156	213
Raccoon	12	5,383	5,408	5	10,636	10,641
Other	416	3,276	6,528	719	5,257	8,979
Dressed						
Hatters' furs	—	259	398	—	136	398
Mink	119	1,322	1,859	2	2,553	2,610
Seal	—	1,294	1,416	—	1,538	1,681
Sheep and lamb	1,124	1,498	3,758	671	675	2,362
Fur plates, mats, etc.	160	827	2,061	103	881	2,585
Other	124	701	1,584	240	1,255	2,330
Fur goods apparel	156	220	1,290	309	358	1,908
Total	5,901	26,987	52,014	5,639	40,059	69,589

Sources

10.1 - 10.4 Information Services Directorate, Department of the Environment.

10.5 - 10.19 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada.

10.20 - 10.23 Agriculture Division, Industry Statistics Branch, Statistics Canada.

Chapter 11

Agriculture

11.1 Agriculture in Canada

Climate, soil conditions and geography have combined to form several distinct farming regions in Canada. A harsh northern climate restricts most agriculture to the southern portion of the country and nearly all farms in Canada lie within 300 miles of the southern border. In the Atlantic provinces and central Canada farming is limited to coastal regions and river valleys, and soils vary in depth and fertility. In the Prairie region soil is fertile but rain is light. Farming is limited to high plateaus and river valleys in the mountainous region of the far west.

Nevertheless farming is an important business in Canada. About 265,000 sq miles in 10 provinces are cultivated; 169,000 sq miles are improved land. Farm income exceeds \$5 billion annually and in 1973 agricultural exports exceeded \$3 billion for the first time. Mechanization and education are increasing the efficiency of farms constantly; a trend toward fewer and larger farms has become evident in the 1961 and 1971 censuses of agriculture.

Farms in Canada can be divided into four main types. Livestock farms include those specializing in feedlot finishing of cattle, large-scale feeding of hogs bought as weanlings, dairying, poultry production for meat and eggs and other aspects of breeding and raising livestock. Grain farms produce crops like wheat, oats, flax and rapeseed. Special crop farms produce vegetables, fruits, potatoes or other root crops, tobacco or forest products. Other farms combine livestock and grain production. Although each of the regions has its specialties none is limited to one type of farming.

11.1.1 Crops and livestock

The Atlantic region. This area includes Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick and the Gaspé district of Quebec. It is a hilly region, with a general covering of relatively fertile soil developed under forest cover. The climate is modified by the sea but it is also affected by cold currents from the coast of Labrador and winds from the north. Precipitation averages 30 to 55 inches annually. Mixed farming is general and forage crops support a healthy livestock industry. It is not unusual to find the small farmers combining fishing or lumbering with farming.

In Nova Scotia the main agricultural areas surround the Bay of Fundy and Northumberland Strait, where they are protected from the Atlantic gales. Dairying and poultry farms are common and beef farming is increasing. The Annapolis Valley is famous for its fruit, particularly apples. New Brunswick produces potatoes and livestock in the Saint John River valley and there is mixed farming in the northwest. More than a third of the commercial farms in the province are classed as dairy farms.

Farming is the principal occupation on Prince Edward Island. Potatoes are the leading crop but the fertile land also supports mixed grains, dairying and other livestock enterprises. Small fruits and vegetables are also produced.

In Newfoundland agriculture is of only local importance because of rough terrain. Bogland offers some potential for reclaiming and vegetable farming.

The central region. This lowland area bordering the St. Lawrence River, includes the farms of the Ottawa Valley and extends through southern Ontario to Lake Huron. Fertile soils, mostly formed by glacial drift and lake sediment developed under deciduous forest cover, and a mild climate modified by the Great Lakes and the St. Lawrence River account for varied farming. Precipitation averages 30 to 45 inches a year. It is the most densely populated part of the country, providing large markets for farm produce.

Well over half the commercial farms of Quebec are now classified as dairy farms, a change from the traditional small mixed farming operations of old Quebec. Sizable butter and cheese industries rely on these farms. Livestock farms, specializing in beef cattle, hogs or sheep, and mixed farms are also common and poultry and egg production is increasing. Forage is the largest cultivated crop in the province although oats and corn for feed are also produced. Fruits and vegetables, particularly apples, are becoming prime crops. Sugar beets and flue-cured tobacco are grown and processed in the province.

Ontario has specialized crops in its more southerly regions, but it also has by far the largest number of commercial livestock farms and is second to Quebec in the number of dairy farms. Again forage crops are the largest cultivated crops; others are corn, mixed grains, winter wheat, oats and barley.

Dairy farms are concentrated in Middlesex, Oxford and Perth counties in southwestern Ontario, in the Bruce Peninsula and in the eastern counties. Beef is a specialty in Lake Huron and Georgian Bay areas where pasture is ample. Sheep, poultry and hog production are widespread. Ontario is a major producer of apples and the Niagara Peninsula accounts for most of Canada's tender tree fruits and grapes. Vegetables are grown near most large centres. Maple syrup is a major sideline for farmers in Ontario and Quebec.

The Prairie region. Manitoba, Saskatchewan and Alberta contain 75% of the farm land in Canada. Precipitation that averages only 342.9 to 508 millimetres a year and a climate of bitter winters and short hot summers favour the production of high quality hard red spring wheat, by far the largest single crop in all three provinces. Rangeland and pasture also support a large cattle population and the rearing of livestock in general is a major industry.

Manitoba has the highest rainfall of the three provinces and an average of 100 frost-free days, resulting in more varied farming. Wheat and other grains predominate but rapeseed is also grown, and mixed farming with an emphasis on livestock is common. Vegetables, sugar beets and sunflowers are grown south of Winnipeg and processed locally. Dairy farms are common around Winnipeg; hog production and sheep farms are widespread and beef cattle are found in the southwest. There are also some poultry farms of local importance.

Saskatchewan grows about two thirds of all Canada's wheat and large quantities of other grains, aided by light spring rainfall and long sunny days. Rapeseed is a popular crop and irrigation assists vegetable and forage crops. Mixed farming is common in the north where rainfall is higher, and turkey farming as well as egg and broiler chicken production are increasing. Hogs and beef cattle are gaining in importance. Some commercial flocks of sheep exist.

Alberta is second to Saskatchewan in grain production but has more beef cattle than any other province. These are concentrated in large ranches in the south and in the foothills of the Rocky Mountains. Cattle-feeding operations are expanding and Alberta is a leading producer of hogs and sheep. Irrigation in the south aids in producing canning crops, sugar beets and forage crops. Dairy and poultry products are prominent in the mixed-farm economy of the province. In the northwest the Peace River district produces significant quantities of grain and livestock.

The Pacific region. The most westerly region of the country, British Columbia, is occupied largely by mountains and forests. Only 2% of the area is agricultural. There is no single regional climate: the Pacific Coast has mild temperatures and high rainfall, the interior has moderate temperatures with parts of it as dry as the prairies, and the central interior, although a little cooler, has fairly high precipitation. Farms tend to be small and highly productive and are concentrated in the south-central mainland and southern Vancouver Island.

Livestock and dairying account for the greatest part of BC's agricultural production. Hogs and beef cattle are raised on many farms, beef particularly in the central and southern interior areas. Dairying and poultry meat and egg production are concentrated in the lower Fraser Valley where the population is large. Mixed farming is scattered throughout the province.

British Columbia is Canada's largest producer of apples. The Okanagan Valley is also noted for tree fruits like peaches, plums and cherries. Raspberries and strawberries are grown largely in the Fraser Valley and on Vancouver Island along with other horticultural crops — apricots, grapes, tomatoes, sweet corn and potatoes. The processing industry is also well developed. Vancouver Island's mild climate also produces flowering bulbs.

The northern region. The agricultural region north of latitude 55° consists of parts of northern British Columbia, the Yukon Territory and the Mackenzie River valley in the Northwest Territories. Agricultural settlement in the area is not encouraged by the harsh climate and small population. Precipitation varies from light in the northern Yukon to heavy on the mountainous coast of BC. Frosts can occur in any month of the year, but crops grown on northern slopes escape some damage. The North is estimated to have 3 million acres of potentially arable land and thousands of acres of grazing land, but at present there are probably

fewer than 30 commercial farms in the region. Dairy products, beef cattle, forage crops, feed grains and vegetables are produced for the small local market.

11.1.2 Farm ownership and labour

Most farms in Canada are owned by the farmers who operate them, but as individual farms increase in size more land is being rented. By 1971, 26% of Canadian farmers rented some of the land they farmed; 5% rented all their land. Payment is usually cash or a share of crops or receipts.

Farm families provide most of the labour required on farms, although experienced workers are often employed on dairy farms and seasonal workers are required for harvests. In the west operators of combine harvesters often move their machinery with the harvest, starting in the US and moving into Canada later in the season. Potato harvesters follow the same pattern in the east. Farmers often assist each other when necessary and the Department of Manpower and Immigration operates farm labour pools in areas of high demand.

11.1.3 Transportation

Railways have been the traditional method of transporting agricultural products to large markets and ports. The Prairie provinces in particular rely on trains to move wheat and livestock to Canadian markets and to elevators in Vancouver, Churchill and Thunder Bay for shipment to foreign ports. Bulky products like sugar beets are usually shipped by rail.

Many products are now being shipped by road. Although the railways have retained their importance in the Prairies many branch lines have been abandoned in other areas and most farmers now ship their produce at least part way in their own trucks. Eggs, poultry, cream, fruits and vegetables go to local markets by road and milk is generally collected at farms by tank trucks. Commercial farms and co-operatives use trucks for marketing and distributing agricultural products and in delivering supplies to farms.

Water routes supplement these methods. The Great Lakes have long been used to ship grain from Thunder Bay to eastern Canada during the shipping season and since the opening of the St. Lawrence Seaway in 1959 the lakes have been open to ocean-going vessels. Churchill is another seasonal port for Prairie grains, and Vancouver and Halifax are year-round ports.

11.1.4 Marketing and supplies

The marketing of Canada's farm products is a blend of private trading, public sales and auctions, and sales under contract and through co-operatives or marketing boards. Methods vary with the type of product, the region and the preferences of producers. Most products, except western grains and a few special crops, are marketed in more than one way.

Canada's principal livestock markets are at Montreal, Toronto, Winnipeg, Calgary and Edmonton, but there are many other outlets that vary from large stockyards to country collection points. Most cattle and calves are marketed by auction at public stockyards; the remainder go directly to packing plants or are exported. Most hogs, sheep and lambs are sold directly to packing houses; sales of hogs are usually handled by marketing boards.

Egg sales in Canada are regulated by the Canadian Egg Marketing Agency and the Canadian Turkey Marketing Agency performs similar services for turkey producers. Chickens raised for meat are marketed through provincial marketing boards which have the authority to allocate producer quotas, set producer prices and collect levies.

The marketing of fluid milk is a provincial responsibility and quality, prices, and deliveries are regulated by provincial marketing agencies which estimate market requirements and assign producers a share of the market. A marketing plan under which individual producers are allocated a share of the Canadian market for milk used for manufacturing is in effect in all provinces except Newfoundland. Market shares under this plan are administered by the provincial marketing agencies under the direction of the Canadian Dairy Commission.

Most of the grain marketed in Canada is grown in the Prairie provinces. The Canadian Wheat Board is responsible for various aspects of marketing wheat, oats, barley, rye, flax and rapeseed in western Canada and in Ontario all wheat grown in the province is sold through the Ontario Wheat Producers' Marketing Board.

Fruit and vegetables are distributed through fresh and frozen food markets, canneries and other processors. Most produce is grown under a contract or a pre-arranged marketing

scheme; marketing boards, producers, associations and co-operatives are common. Tobacco is controlled by marketing boards in Ontario and Quebec, soya beans by a board in Ontario and sugar beets by contracts with refineries in Quebec, Manitoba and Alberta.

Farmers' co-operatives are usually organized to handle or market producers' crops or livestock, or to supply the goods and services needed in farming, or both. Co-operative pooling arrangements for farm products guarantee farmers cash advances on their deliveries whether the products are sold immediately or not.

The marketing of seed in Canada is carried on by private seed companies, farmer-owned co-operatives and seed growers. Seed grades established by federal government regulation provide the user with information on the relative utility of different lots of seed. Pedigree seed is produced by members of the Canadian Seed Growers' Association under conditions that ensure the purity of the variety.

Farm machinery, building materials, fertilizers, agricultural chemicals and other supplies are obtained through commercial and co-operative outlets.

11.1.5 Trends and highlights, 1974

Early in the year it was announced that agricultural exports in 1973 accounted for 12% of Canada's total exports and 44% of total farm cash receipts. Grain, traditionally a major export, accounted for about half the farm exports but meat and livestock sales are of growing importance.

In 1974 purebred stock were exported to several countries, including Brazil, Mexico, Argentina, Bulgaria, China, Australia, New Zealand, Japan, Britain and the United States. Czechoslovakia imported 1,105 head of Canadian polled Herefords and Cuba 2,500 purebred dairy cows. Exports of frozen semen from Canadian bulls were valued at \$8.9 million. Powdered milk exported to Mexico in February 1974 was valued at \$34 million.

In April 1974 the industrial milk subsidy was increased to provide a target support price of \$8.50 a cwt. In August 1974 the support price was raised by 91¢, with 30% of the increase coming from federal government funds and the remainder from increased dairy product prices. Stabilization plans establishing support prices for beef and hogs were introduced; beef cattle exports were restricted to the five-year average level. A program of assistance for cow-calf operators was also initiated to avoid heavy sales of brood cows anticipated because of record high feed grain prices.

The Fruit and Vegetable Storage Assistance Program paid \$1.56 million in grants in four provinces. Two grants were awarded under the new \$1-million Crop Development Fund established in July; the feasibility of growing utility wheats and peanuts is to be studied.

More than \$77 million was paid to Canadian wheat-growers under the two-price wheat agreement which provides millers with wheat at a fixed price of \$3.25 a bu and pays producers the differences between that price and a maximum of \$5 a bu. The Farm Credit Act was amended to increase the maximum loan for farmers under 35 years of age to \$150,000 from \$100,000 and to allow young farmers to go into full-time farming over a period of five years.

11.2 Federal government services

11.2.1 Canada Department of Agriculture

Responsibilities of the Canada Department of Agriculture cover three broad areas: research, promotional and regulatory services and assistance programs. Research aims at solving practical farm problems by applying fundamental scientific research to all aspects of soil management, agricultural engineering, and crop and animal production (see Chapter 9). Promotional and regulatory services attempt to control and eradicate crop and livestock pests and register chemicals and other materials used for these purposes. Also included are inspection and grading of agricultural products and the establishment of crop and livestock improvement policies. Assistance programs cover some of the sphere of price stability, emergency relief, crop insurance, compensation, and income security in the event of crop failure. Further details can be found in the *1974 Canada Year Book* pp 414-417.

11.2.2 Farm assistance programs

Basic to the concept of Canada's national agricultural policy is the premise that a stable agriculture is in the interests of the national economy and that farmers as a group are entitled

to a fair share of the national income. Consequently the Canada Department of Agriculture has conducted long-term programs designed to aid agriculture through the application of scientific research and the encouragement of improved methods of production and marketing. Over the years, as conditions have warranted, programs have been initiated to deal with special situations. Mitigating the effects of crop failure, assisting the movement of Prairie feed grains to eastern Canada and British Columbia, reclaiming soil in the Maritime provinces and combating drought in the agricultural areas of Manitoba, Saskatchewan and Alberta are examples.

Changes in the past two decades have dictated the need for a different approach to some problems. Large-scale mechanization and, in some segments of the industry, automation have reduced manpower requirements significantly; the number of farms has declined but the size of farms has increased; marketing and income problems have taken different forms; and a decline in some rural communities has occurred together with problems of regional disparity. Legislation enacted to meet these situations includes price support (Agricultural Stabilization Act), dairy market and producer income stabilization (Canadian Dairy Commission Act), crop insurance (Crop Insurance Act), feed grain assistance (Livestock Feed Assistance Act), credit facilities (Farm Credit Act, Farm Syndicates Credit Act, Farm Improvement Loans Act), marketing assistance (Canada Grain Act, Agricultural Products Board Act, National Farm Products Marketing Council) and other forms of assistance to meet emergency or long-term conditions (Prairie Farm Assistance Act, Prairie Grain Advance Payments Act, Agricultural and Rural Development Act and Prairie Farm Rehabilitation Act). All these measures are administered by the Canada Department of Agriculture or by organizations responsible to the Minister except the Farm Improvement Loans Act (administered by the Department of Finance), Prairie Grain Advance Payments Act (Department of Industry, Trade and Commerce) and the ARDA and PFRA programs (Department of Regional Economic Expansion) and the Small Farm Development Program.

The Canadian Grain Commission was established in 1971 under the Canada Grain Act replacing the former Board of Grain Commissioners for Canada. For more detailed information on this Commission see Section 11.8.1.2.

The Agricultural Stabilization Board, established in 1958 by the Agricultural Stabilization Act which at the same time repealed the Agricultural Prices Support Act, 1944, is empowered to stabilize the prices of agricultural products to assist the agricultural industry in realizing fair returns for labour and investment, and to maintain a fair relationship between prices received by farmers and the costs of goods and services that they buy.

The Act provides that, for each production year, the Board must support, at not less than 80% of the previous 10-year average market or base price, the prices of nine commodities: cattle, hogs and sheep; butter, cheese and eggs; and wheat, oats and barley produced outside the Prairie areas as defined in the Canadian Wheat Board Act. Other commodities may be supported at such percentage of the base price as may be approved by the Governor in Council. Since the Act came into force the following farm products, other than the nine named, have been supported at one time or another: honey, potatoes, soya beans, sunflower seeds, sugar beets, apples, peaches, wool, fowl, blueberries, rutabagas, carrots, sour cherries, raspberries, asparagus, tomatoes, flowers, milk for manufacturing, casein, cream, fluid milk, fluid cream and skim milk powder. The Board may stabilize the price of any product by an offer-to-purchase, by a deficiency payment or by making such payment for the benefit of producers as may be authorized.

In stabilizing prices of certain commodities by means of assistance payments, the price stabilization program has been assisting the agricultural industry to balance production and demand. During the period of adjustment the Board guarantees a minimum average return to producers for their product based on a national average.

The cost of stabilization programs under the Act has averaged approximately \$91.2 million a year. The Board has available a revolving fund of \$250 million, according to the Act; losses incurred are made up by Parliamentary appropriations and any surplus is paid back to the Consolidated Revenue Fund. An advisory committee named by the Minister of Agriculture and composed of farmers or representatives of farm organizations assists the Board in its operations.

The Agricultural Products Board was established in 1951 to administer contracts with other countries for the purchase or sale of agricultural products and to perform other commodity operations as Canadian needs may dictate. The Board's recent activities have included the purchasing of surplus Canadian commodities with resulting improvement in producer prices. Some of these commodities have been processed, packaged and delivered to the World Food Programme as part of Canada's commitment to the Food and Agriculture Organization of the United Nations.

The Crop Insurance Act was passed in 1959 (RSC 1970, c.C-36) to permit the federal government to assist the provinces in making all-risk crop insurance available to farmers across Canada on a shared-cost basis under the terms and conditions of federal-provincial agreements. Crop insurance is intended to protect the farmer against unforeseen losses by spreading their impact over a number of years. The initiative for establishing crop insurance rests with the provinces and schemes may be organized to meet provincial requirements for insurable crops and areas.

Under the Act, as amended, the federal government contributes a portion of premium costs and/or administration costs and shares the risk by providing loans or re-insurance when indemnities greatly exceed premiums and reserves. Commencing with the 1973 crop year the farmers pay 50% of the total premiums required to make the schemes self-sustaining. The remainder is contributed by the federal government if the province elects to pay all administrative costs, and is shared equally between the provincial and federal governments if the province elects to share the administrative costs equally.

In the 1974-75 crop year 85,000 farmers purchased some \$660 million in crop insurance coverage. Premiums totalled \$62.0 million (including government contributions) and indemnities to be paid out are estimated at \$620 million, for a loss-to-premium ratio of 1.00. The number of farmers participating increased by 16% over 1973 while coverage increased by 80% to \$677 million. The most significant increase in participation and coverage occurred in Saskatchewan.

Yields of many crops in all provinces were substantially reduced by a variety of natural hazards throughout the 1974 growing season. A cold, wet spring across the Prairies delayed seeding of cereal and oilseed crops. Early fall frosts caused severe losses to these late seeded crops. Early frost also hit the apple crops in British Columbia and Nova Scotia and the potato crops in the Maritime provinces. There were also the usual localized losses resulting from drought, excessive moisture, hail and insects.

The Prairie Farm Assistance Act, 1939 (RSC 1970, c.P-16) was designed to provide for direct cash payments by the federal government on an acreage-and-yield basis to farmers in areas of low crop yield in the Prairie provinces and the Peace River area of British Columbia.

The program has been phased out gradually over a period of years. Collection of the levy was suspended in the 1971-72 crop year and beginning with the 1973-74 crop year benefits were limited to areas where a provincially operated crop insurance program was not available. This protection was extended to all areas of the Prairies for the 1974-75 crop year.

The Prairie Farm Assistance Administration was also responsible for administering the Grassland Incentive Program which provided a subsidy of \$10 an acre to farmers who increased their acreage of perennial forage. Payments to farmers under this program during its three years of operation have amounted to some \$57 million. The program terminated with payments made in 1974-75 on perennial forage acreage which was seeded in 1973.

The Canadian Dairy Commission was established by the Canadian Dairy Commission Act in 1966 and became operative on April 1, 1967. The affairs of the Commission are directed by three Commissioners, and its objects are "to provide efficient producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment and to provide consumers of dairy products with a continuous and adequate supply of dairy products of high quality".

To perform its functions, the Commission is authorized to stabilize prices of major dairy products through offers to purchase at fixed prices, thus establishing stable prices in the interests of both producers and consumers. The Commission may borrow from the Minister of Finance the funds required for such purchases to a maximum of \$100 million, which must be repaid.

The Commission administers the payment of funds provided by the government for subsidies to producers of manufacturing milk and cream. These payments supplement returns to producers from the market and permit market prices to be kept at reasonable levels. Each producer is eligible for subsidy on shipments covered by his market share quota. The Commission, indirectly, pools returns to producers from products sold on the domestic and export markets through an export equalization fund. Money for this is collected by levies from producers in provinces under the Market Sharing Quota Program — Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia — and remitted to the Commission. The funds are used to equalize export prices with domestic prices, for any products exported below domestic prices. More details on the activities of the Commission with regard to marketing may be found in Section 11.8.2.2.

The Livestock Feed Assistance Act established the Canadian Livestock Feed Board, which is a Crown agency reporting to Parliament through the Minister of Agriculture. The Board has four main objectives: to ensure that feed grain is available to meet the needs of livestock feeders; that adequate storage space in eastern Canada is available for feed grain to meet the needs of livestock feeders; that the price of feed grain in eastern Canada and in British Columbia remains reasonably stable; and that there be fair equalization of feed grain prices in eastern Canada and in British Columbia.

To these ends, the Board may make payments related to the cost of feed grain storage and transportation. Feed grain transportation assistance payments have been made since 1941. Under the Feed Grain Assistance Regulations of the Appropriations Act, the original program was initiated in October 1941 to provide a market for western feed grains and to enable livestock feeders in eastern Canada and British Columbia to obtain supplies at a cost that would maintain livestock and poultry production at a high level. Since April 1967, the freight subsidy has been administered by the Canadian Livestock Feed Board under the authority of the Livestock Feed Assistance Act. This program has been modified over the years to encourage better utilization of both transport and storage facilities. Initially, it was applied only to feed grains produced in the Prairie provinces and designated for domestic livestock consumption in eastern Canada and British Columbia. More recently it has been extended to the movement of Ontario corn and wheat into the Atlantic provinces and Ontario wheat into Quebec. The total subsidy of approximately \$20 million a year covers roughly half the transportation and handling costs of moving about 3 million tons of eligible feed grains.

The Livestock Feed Assistance Act also contains provisions for the Board to buy, transport, store and sell feed grains when authorized by the Governor in Council.

The Farm Credit Corporation was established in 1959 as successor to the Canadian Farm Loan Board set up in 1929. The Corporation, a Crown agency, reports to Parliament through the Minister of Agriculture.

Two types of long-term mortgage loans are available under the Farm Credit Act. Under Part II loans may be made up to 75% of the appraised farm value not exceeding \$100,000 for any farmer alone or jointly with others in a single farming business. Under Part III supervised loans may be made to young farmers up to 75% of the appraised value of land and chattels, not exceeding \$100,000 for any farmer alone or jointly with others in a single farming business; special provision is made under this Part for loans up to 90% of farm assets where the owner-operator is under 35 years of age and management will be considerably above average. Under both Parts applicants must be principally occupied in farming and be of legal age to enter into a mortgage agreement. Individual applicants under Part III must be less than 45 years of age. Loans may be made only to Canadian citizens or those with landed immigrant status. The interest rate is set by Order in Council and varies with the cost of money to the Corporation. The repayment period under both Parts is up to 30 years.

The Corporation has 117 field offices at which are based 222 credit advisers responsible for informing local farmers about the services available, for pre-loan counselling on credit use, farm planning and farm management, for accepting applications and for making farm appraisals.

In addition to the amounts repaid by borrowers, funds for lending to farmers may be borrowed by the Corporation from the Minister of Finance. The aggregate amount of such borrowings outstanding at any time may not exceed 25 times the capital of the Corporation.

This capital was raised by amendment to the Act in 1972 from \$56 million to \$66 million. There were 68,104 loans to the amount of \$1,390 million outstanding as at March 31, 1974. During the 1973-74 fiscal year the Corporation approved 9,041 loans for \$400.6 million.

The Farm Syndicates Credit Act authorizes the Farm Credit Corporation to lend to qualified groups of farmers (referred to as syndicates). A syndicate is a group of three or more farmers, the majority of whom have farming as their principal occupation, who have signed an agreement acceptable to the Corporation with respect to the joint purchase and use of machinery, equipment or buildings which can be used profitably by them in their farming operations. Co-operative farm associations and certain farming corporations may qualify as syndicates for loans without the members entering into a formal agreement.

A syndicate may borrow up to 80% of the cost of machinery, buildings (including site and other improvements) and installed equipment suitable for joint use, to a maximum of \$15,000 a member or \$100,000, whichever is the lesser. Loans are repayable over a period not exceeding 15 years for buildings and installed equipment, and seven years for mobile machinery. The interest rate is based on the cost to the Corporation of funds advanced by the Minister of Finance, and its expenses in servicing loans. There is an initial charge of 1% on the amount of each loan. Security is provided by a promissory note signed by each syndicate member, and such other security as may be required. Up to March 31, 1974 the Corporation had approved loans for 936 syndicates totalling \$17.5 million. During the 1973-74 fiscal year the Corporation approved 238 loans for \$4.3 million.

The Small Farm Development Program, initiated by the Canada Department of Agriculture in 1971 with the establishment of a \$150-million fund to cover the first seven years of operation, is available to the provinces by agreement. It offers extended credit facilities to operators of small farms for the purchase of additional land to enable them to remain on the land and develop a profitable business; at the same time, the program benefits owners of small farms who choose to give up farming by allowing an adjustment grant in addition to the selling price of their land. Management and counselling services are also available.

The Land Transfer Plan of the Small Farm Development Program is administered by the Farm Credit Corporation acting as agent for the Canada Department of Agriculture. Under this Plan special credit is made available for the purchase of land under agreement for sale. Unless the federal-provincial agreement specifies otherwise, the maximum permissible sale price is \$20,000, with a down payment as low as \$200 and a repayment period of not more than 26 years. The purchaser must be a Canadian citizen or landed immigrant who is the owner of a farm or has been a tenant for at least three years and whose principal occupation is the operation of that farm. He must have less than \$60,000 of assets and must buy from a vendor who is eligible for the assistance grant under the Plan.

To be eligible for the grant, consisting of \$1,500 plus 10% of the sale price of the farm up to \$20,000 and not exceeding a maximum of \$3,500, a vendor must at the date of commencement of the program be the owner of a small farm and be principally occupied in the operation of that farm. He must be able to support himself and his family at least as well after the sale as before, and he must sell all or substantially all of his land to a Canadian citizen or landed immigrant who will not operate the property as a separate uneconomic farm. The vendor is not eligible for a grant if the property sale price exceeds \$20,000 or such other maximum as may be established in the agreement with a particular province. Grants may be in cash or in the form of an annuity.

The Corporation maintains a listing service in its field offices to help bring sellers and buyers together. In special circumstances where no other purchaser is immediately available, the Corporation may purchase farm land for future resale at a price not exceeding 90% of the Corporation's estimate of its market value within the limits prescribed for the province where the property is situated. The seller will be eligible for a grant of \$1,500 plus 10% of the Corporation's estimate of the market value to a maximum of \$3,500.

The first complete fiscal year of operations under the Land Transfer Plan was 1973-74. The Corporation approved \$5.3 million in vendor assistance grants for 1,778 farmers who were retiring or making an adjustment to other pursuits. Special credit assistance amounting to \$4.3 million was approved for 250 farmers to expand their holdings with land that became available under the Plan.

The National Farm Products Marketing Council was established by the Farm Products Marketing Agencies Act in 1972 to advise the Minister of Agriculture on all matters pertaining to the establishment of marketing agencies. It reviews their operations and assists them in promoting more effective marketing of farm products and co-ordinates related activities of the provincial governments as well as the efforts of producers to establish marketing plans. The first application for the establishment of a national agency was submitted by egg producers and the Canadian Egg Marketing Agency was created in December 1972 and was followed by the Canadian Turkey Marketing Agency which was proclaimed in December 1973.

The Farm Improvement Loans Act, administered by the Department of Finance, is designed to facilitate the availability of credit by way of loans made by the chartered banks and other lenders designated by the Minister of Finance to assist in almost every conceivable purchase or project for the improvement or development of a farm. It includes the purchase of agricultural implements, the purchase of livestock, the purchase and installation of agricultural equipment or a farm electrical system, the major repair or overhaul of agricultural implements and equipment, the erection or construction of fencing or works for drainage on a farm, and the construction, repair or alteration of farm buildings including the family dwelling, and the purchase of additional land for the purpose of farming. Credit is provided on security related to the purchase or project and on terms suited to the individual borrower.

The legislation, originally operative for three years (1945-48), has been continued through extensions, usually for three-year periods. The current period is July 1, 1974 to June 30, 1977. The maximum repayment period for land purchase is 15 years, for vehicles three years, and for all other purposes 10 years. The interest rate is prescribed in the regulations and is adjustable semi-annually on April 1 and October 1 of each year to reflect changes in the levels of interest rates generally. The borrower is required to provide from 10% to 25% of the cost of his purchase or project, depending on the loan category to which it belongs. The federal government guarantees each lender against loss sustained in an amount equal to 90% of the first \$125,000 lent, 50% in excess of \$125,000 but not exceeding \$250,000, and 10% in excess of \$250,000 during a lending period. This guarantee does not apply to any loan made after the aggregate of all loans made by all banks in a given period reaches an amount fixed by statute. The current maximum stands at \$1.1 billion which may be lent by the chartered banks and Province of Alberta Treasury Branches and a limit of \$300 million which may be lent by other designated lenders. From inception of the program to September 30, 1974, 1.7 million loans amounting to about \$3,122 million were made. During the same period, payments were made to the banks under the guarantee provision in respect of 5,220 claims amounting to \$5.5 million, representing a loss ratio of less than one fifth of one percent. The maximum loan or amount that may be outstanding to a borrower at any one time is \$50,000.

The Prairie Grain Advance Payments Act which came into force on November 25, 1957 (RSC 1970, c.P-18) and was subsequently amended, provides for interest-free advance payments to producers in western Canada for farm-stored threshed grain (wheat, oats and barley). The rate of advance payment a bushel for wheat, oats and barley is prescribed by regulation each year. The rate approximates two thirds of the initial payment on the grade of each grain which it is estimated will be delivered in the greatest volume by producers to country elevators during the crop year. The maximum total advance is governed by quota levels also prescribed by regulation and may not exceed \$6,000 for any individual producer for the crop year. The rate of repayment is the same as the rate of advance. Repayment is effected by deducting approximately two thirds of the initial payment for wheat, oats and barley delivered subsequent to the loan until the producer has discharged his advance.

The Act also contains provisions for special advance payments covering unharvested grain and the drying of grain. The maximum total advances receivable for these special advances are \$3,000 and \$600 respectively.

11.3 Provincial government services

11.3.1 Departments of agriculture

Newfoundland. Government agricultural services in Newfoundland are operated by the Department of Forestry and Agriculture. The Agriculture Division consists of six directors

and a staff of 125 under an Assistant Deputy Minister of Agriculture. For administrative purposes, the province is divided into a number of districts with an agricultural representative located in each. Specialists in charge of different phases of agricultural development visit each district on assignment from the St. John's office.

Departmental policies in support of the agricultural industry include: a bonus on land cleared on private farms; distribution of ground limestone at a subsidized rate; payment of bonuses on purebred sires; financial assistance to agricultural societies, marketing organizations, and exhibition committees; and grants-in-aid of constructing vegetable storage facilities.

Favourable marketing conditions and departmental assistance and loans under the provincial Farm Development Loan Board, the Newfoundland Marketing Board and the Newfoundland Farm Products Corporation have contributed to increased output of agricultural products in the province.

Prince Edward Island. The Prince Edward Island Department of Agriculture and Forestry is composed of the following branches and divisions: the Economics, Statistics and Marketing Branch; the Extension Services Branch, which consists of the Farm Management Division, the Information Section, the District Agricultural Extension Division, the 4-H Division and the Home Economics Division; the Production Services Branch, which consists of the Soils and Crops Division and the Veterinary and Livestock Division; and the Forestry Branch, which consists of the Forest Nursery Division and the Bunbury Nursery Division. The latter is described in more detail in Chapter 10.

Nova Scotia. The Nova Scotia Department of Agriculture and Marketing directs the government's agricultural program by implementing provincial agricultural policies. The Department is administered by a Minister, Deputy Minister and branch directors concerned primarily with extension and economics, horticulture and biology, livestock services, market development, soils and crops, and formal agricultural education through the Nova Scotia Agricultural College located in Truro. The Department is particularly interested in encouraging rural people to help themselves through such organizations as the Nova Scotia Federation of Agriculture, the Nova Scotia Fruit Growers' Association and other commodity-oriented groups.

New Brunswick. Provincial government agricultural policy and programs in New Brunswick are administered and directed by the Department of Agriculture and Rural Development. Under the Minister of Agriculture and Rural Development, the Department is administered by a Deputy Minister, an Assistant Deputy Minister and the directors of branches concerned with extension, livestock and dairying, veterinary services, poultry, plant industry, agricultural engineering, home economics, credit unions and co-operatives, and rural development. The Department also has a Farm Economics Division and an Information Division, as well as a Farm Adjustment Board, a Natural Products Control Board, a Dairy Products Commission, a Forest Products Commission and a Planning and Development Branch.

Quebec. The aim of the Quebec Department of Agriculture is to promote agricultural development by making the best possible use of the province's resources by providing advice and technical assistance to farmers. Programs and regulations are constantly updated to meet changing situations. The modernization of agriculture and raising the standard of living in rural areas are of principal concern.

The Minister responsible for agriculture directs the Department and the Quebec Sugar Refinery, the Farm Credit Bureau, the Agricultural Marketing Authority and the Crop Insurance Administration, each of which is operated by an autonomous board of directors. Under the general direction of the Minister, the Deputy Minister is responsible for administration of the Department, for policy co-ordination and for the planning and execution of programs established under these policies. Three Assistant Deputy Ministers are responsible for the principal branches of the organization: Production; Research, Education and Administration; and Marketing.

The Production Branch makes its principal services and divisions directly available to the farmer: veterinary services, animal husbandry, artificial insemination, regional offices and laboratories, special projects, engineering and plant products. Veterinary services include work in the health of animals field, the contributory animal health insurance plan and the provincial laboratories at Quebec and St-Hyacinthe as well as the veterinary medicines distribution centre

at St-Hyacinthe; this service is also responsible for meat inspection and carries out sanitary inspection of meats in slaughterhouses and meat packing or processing plants operating under the "Quebec Approved" program. The animal husbandry section deals with dairy and butcher cattle, pork, fowl, sheep and horses, fur-bearing animals and domestic rabbits. The artificial insemination service works closely with breeders' groups. Twelve regional offices and five laboratories, an information section and a young farmers section are responsible for adult education, technical training, regional development and soils, and plant and animal development. The engineering section is concerned with mechanized operations, farm buildings and agricultural water services. The plant production section advises and assists farmers on field crops, horticulture, maple products and apiculture. The section is also responsible for assessing damage to uninsured crops, and the operation of two laboratories conducting soil and plant tissue analysis, the Manicouagan potato breeding centre, the pilot blueberry processing plant at Normandin and is responsible for the financial and administrative management of the St-Bruno blueberry freezing plant.

The Research, Education and Administration Branch consists of a research and education division, administrative and financial services and personnel services. Research and education is also responsible for various organizations and services, the La Pocatière and St-Hyacinthe institutes of agricultural technology and a research section dealing with crop protection, soils and research stations. The Assistant Deputy Minister in charge of the Branch is the president of the Quebec Research Council, the co-ordination and promotion centre for most of the agricultural research carried out in Quebec directing research into specific fields to meet the special needs of Quebec agriculture. Its work is co-ordinated with the Quebec Plant Products Board, the Quebec Animal Husbandry Board, and the Quebec Products Board and priorities are determined in co-operation with those organizations. In addition it maintains close liaison with federal government researchers. Administrative and financial services are also attached to this Branch. The personnel section, which makes up the rest of the Branch, includes farm labour and civil defence.

The Marketing Sector serves both agriculture and the consumer and includes a Marketing Branch and two divisions responsible for control of dairy and meat products and the prevention and elimination of fraud. The Marketing Branch carries out economic studies (production, distribution, analyses and forecasts), looks after marketing of agricultural products (publicity and search for markets) and provides technical assistance to the food industry (industrial development and business organization). Apart from its marketing role the Branch is responsible for quality control and the chemical foods laboratory.

Ontario. The Ontario Ministry of Agriculture and Food conducts a variety of programs to develop a sound agricultural industry and to help farmers. Most assistance is given through self-help programs which benefit the individual farmer. The Ministry administers 48 separate legislative Acts, some of which are regulatory, on an industry-wide basis. The Ministry has 54 county and district offices located throughout the province.

Under the Federal-Provincial Rural Development Agreement, 1970-75, the province shares equally with the Government of Canada the cost of certain rural development programs. In Ontario, ARDA is committed to programs of farm enlargement and adjustment, rural resource development and assistance to rural industries to increase employment opportunities for rural people.

Agricultural Manpower Services co-operates with the Canada Department of Manpower and Immigration by recruiting and referring full-time farm workers, providing grants for the construction and renovation of housing for seasonal workers and financing transportation of Canadian workers into the harvest area.

The Co-operative Loans Board makes loans to agricultural co-operative associations for the construction of cold storages, feed mills, processing plants, grain elevators, potato storages, dairies, creameries and cheese factories.

The Soils and Crops Branch conducts programs of applied research to provide farmers with specific recommendations for their areas. Soil and crop specialists frequently work with local branches of the Ontario Soil and Crop Improvement Association to relay this information to the farmers. Specialists also supervise county inspectors who enforce the Weed Control Act. Extension horticulturists provide specialized advice to producers of fruit, vegetables, mushrooms, greenhouse crops and flowers.

The programs of the Veterinary Services Branch fall into the categories of service and regulation and are administered by three sections: the laboratory section, through six veterinary services laboratories, provides diagnostic, investigational, consultation and extension services to veterinarians and livestock and poultry producers, and also administers the Fur Farms Act; the meat inspection section administers the Meat Inspection Act which provides for meat inspection in slaughtering plants in Ontario that are not under federal inspection; and the regulatory and communicable diseases section administers Acts, policies and programs concerned with disease control, animal care and sale of livestock medicines.

The Live Stock Branch supervises numerous livestock improvement programs, and administers the Artificial Insemination of Live Stock Act, the Beef Cattle Marketing Act, the Dog Licensing and Live Stock and Poultry Protection Act, the Hunter Damage Compensation Act, the Live Stock Branding Act, the Protection of Cattle Act, the Provincial Auctioneers Act, the Warble Fly Control Act and the Live Stock and Live Stock Products Act. Livestock improvement programs include dairy herd improvement; beef cattle, sheep and swine performance testing; bull and ram premium policies; the federal-provincial sheep transportation assistance policy; and northern Ontario livestock assistance. The Branch makes grants available to regional livestock clubs that hold sales and livestock shows, and sponsors exhibits of livestock outside the province. A staff of livestock specialists is available to provide feeding and management advice to livestock producers.

The Ontario Stock Yards Board, which operates under the federal Livestock and Livestock Products Act, was established to provide a marketing service for Ontario livestock producers and to protect their bargaining power.

The Crop Insurance Commission of Ontario, a Branch of the Ministry, provides insurance against weather, insect and disease damage to winter wheat, spring grain, hay, corn (both silage and grain), soya beans, white beans, tomatoes for processing, green peas for processing, sweet corn for processing, red beets, apples, peaches, grapes, sweet and sour cherries, pears, set onions, seed onions, coloured beans, new seeding and flue-cured tobacco. The total cost of administration is paid by the Ontario government and 50% of the premium is paid by the federal government.

The Milk Commission of Ontario is an administrative tribunal to which dairy producers, processors and others may appeal. The Commission co-operates with the Ontario Milk Marketing Board and the Ontario Dairy Council in dairy policy planning and development.

The Milk Industry Branch of the Ministry of Agriculture and Food was established in 1973. It assumes responsibility for all regulative and administrative work under the Milk Act, the Oleomargarine Act, and the Edible Oil Products Act. The Branch also administers the milk quality, fluid milk, milk products, plant record audit and central milk testing programs. Included in these programs are the operation of infra-red analyzing of milk for butterfat, protein and lactose, the licensing of processors and distributors, certification of butter and cheese makers, graders and testers as well as inspection of farm premises and plants.

The Farm Products Inspection Branch inspects fruit and vegetables for grade, and promotes improved methods of disease control, grading, packaging, marketing, handling, storing and transporting Ontario farm produce. This is provided for under the Farm Products Grades and Sales Act and Regulations, the Plant Diseases Act, the Containers Act, the Abandoned Orchards Act, and the Seed Potatoes Act. Under the Ontario Farm Products Marketing Board, a branch of the Ministry of Agriculture and Food, 20 producer boards market 40 commodities with a total market value of approximately \$900 million annually.

The Ontario Food Council Branch has the broad responsibility of finding methods to better co-ordinate marketing of Ontario agricultural and food products in Ontario, other Canadian provinces and abroad. The Council includes representatives of producers, processors, wholesalers, distributors and consumers. Market development, import replacement, and expansion of food information and consumer affairs services are major areas of the Council's work. The Ontario Food Terminal, operating under the Ontario Food Terminal Act, offers farmers the services of one of the largest volume wholesale fruit and vegetable markets in Canada.

Research and education are administered by the Education and Research Division. An advisory body, the Agricultural Research Institute of Ontario, reviews current programs of

research and recommends areas of research which should receive priority. The Division undertakes continuous research on soils, field and horticultural crops, livestock, engineering and other areas related to modern farming practices.

The provincial entomologist reports on insect control programs, as provided under the Plant Diseases and Abandoned Orchards Act, to determine pest control recommendations for Ontario crops. The provincial apiarist is responsible for reporting on the bee and honey industry.

The Extension Branch has personnel in each of the 54 county and district offices. Agricultural representatives relay information about agricultural research developments directly to farmers. In addition, specialists on farm management and engineering are located strategically throughout the province. The northern Ontario assistance policies of the Ministry, which vary from year to year, are also administered by the Branch. The Branch endorses and assists the 4-H clubs and the Junior Farmers' Association of Ontario.

The Home Economics Branch conducts an extension program for rural women's groups and for girls' 4-H homemaking clubs. Programs deal with the study of foods, nutrition, clothing, textiles, home furnishings, home crafts and home management.

The Information Branch publishes and distributes several hundred publications on agriculture and food, home gardening and homemaking. News releases, radio tapes and television film clips are used to convey information to farmers. The film library distributes more than 2,000 films annually. The Market Information Service provides up-to-date commodity quotations and farm weather reports to the media and individual producers on a daily basis using radio and audio-tape facilities.

The Agricultural and Horticultural Societies Branch offers advice and financial aid to agricultural and horticultural societies and ploughmen's associations and administers the Drainage Act, the Tile Drainage Act, 1971 and the Agricultural Tile Drainage Installation Act, 1972. The Economics Branch does research into marketing, policy, production, land use and dairying, and works with Statistics Canada to collect and publish statistics on farm production and marketing.

Manitoba. The Department of Agriculture serves Manitoba through four divisions: Marketing and Production; Rural Development; Regional; and Administration and Program Services. Within these divisions the following branches carry out a wide range of services.

The Animal Industry Branch develops and administers policies and programs that encourage the improvement and efficient production of all classes of livestock, including poultry. The Branch is also involved in helping to improve the quality of dairy products at the producer and processor level, by means of inspection, consultation, education and laboratory quality control. In co-operation with federal departments the Branch administers several acts that provide consumer protection and ensure a supply of high quality livestock products.

The Soils and Crops Branch encourages the development, production and improvement of cereal, forage and special crops, and horticulture and promotes proper land use through soil conservation programs; it also develops and administers policies that encourage good field crop husbandry, soil conservation, land development and weed control. The Economics Branch deals with educational and development programs in farm management and agricultural economics and carries out special studies and supervises the new farm diversification program. The Marketing Branch carries out a market development, research and analysis function aimed at establishing long-term markets for agricultural products. Market intelligence and relevant information are provided to the various branches of the Department, to producers and to agribusiness. The Veterinary Services Branch operates a diagnostic laboratory for animal diseases, administers the Veterinary Services District Act and the Veterinary Scholarship Fund Act and works in co-operation with practising veterinarians and the federal Health of Animals Branch in the control of livestock and poultry diseases.

The Technical Services Branch provides programs in agricultural engineering, entomology and beekeeping and offers technical assistance to rural residents installing modern farm water systems. The Community and Family Programs Branch carries out educational and developmental programs in 4-H and youth, agricultural manpower, community affairs, rural counselling and resource analysis; it also administers the Agricultural Extension Centre at Brandon for adult education programs. The Communications Services provides a regular flow

of press, radio and television services to all mass media outlets and produces and distributes over 400,000 booklets, leaflets and circulars each year. The Regional Division is made up of five regions containing 38 district offices, each staffed with agricultural representatives. The major role of this Division is the extending of educational and advisory information in agriculture, homemaking and rural development to rural residents through meetings, field days, short courses and individual contact.

Saskatchewan. The Saskatchewan Department of Agriculture is composed of three main divisions: the Production and Marketing Division, the Farm Resources Development Division and the Extension and Rural Development Division. In addition the Department includes Support Services, a Planning and Research Secretariat and a Grain Handling and Transportation Systems Rationalization Office.

The Production and Marketing Division administers 27 Acts and Regulations designed to improve production, handling, processing and marketing of specific agricultural commodities for the benefit of producers and consumers. It includes the following branches: Plant Industry, Animal Industry, Veterinary Services, Agricultural Engineering Services, and Marketing and Economics; and the following agencies: the Milk Control Board, Saskatchewan Crop Insurance Corporation, Saskatchewan Hog Marketing Commission and the Saskatchewan Sheep and Wool Marketing Commission.

The Extension and Rural Development Division is responsible for development and performance of farm units. It co-ordinates the activities of all department personnel who deal regularly with the public. The Division consists of the Regional Extension Services Branch and the Family Farm Improvement Branch. The Regional Extension Services Branch offers guidance in agricultural adjustment programs. Its work is carried out by 43 agricultural representatives stationed throughout the province and organized into six regional extension districts, each with a supporting staff of specialists. The Family Farm Improvement Branch gives farmers technical advice on farm buildings, farmstead planning, water supplies, waste disposal, mechanization and materials handling.

The FarmStart Corporation is included in the Extension and Rural Development Division. The Corporation administers a credit and grant program for persons establishing or expanding livestock production as a means of developing profitable farming operations.

The Farm Resources Development Division is primarily responsible for the development of land and water resources for agricultural use. It consists of the Lands Branch and the Conservation and Land Improvement Branch. The Division is also responsible for construction work for the Saskatchewan River Irrigation Project and for some development work for community pastures. The Lands Branch encourages consolidation of farm and ranch units where necessary to produce profitable operations; assists with transferring of units from one generation to the next; and promotes greater stability in Saskatchewan agriculture and rural communities. It also administers the limited land owned by the province, 54 provincially operated cattle pastures and five sheep pastures.

The Saskatchewan Land Bank Commission and the Agricultural Implements Board are included in the Land Resource Development Division. The Saskatchewan Land Bank Commission provides an alternative for farmers not wishing to commit themselves to an investment in land. It also provides Saskatchewan land-owners with a continuing sales opportunity for their land, enables new farmers to commence farming independent of substantial family assistance and permits farmers with insufficient land to add to their land without raising large sums of money for capital investment. Major activities of the Agricultural Implements Board include registration of implement distributors, licensing and inspection of retail vendors, and investigating complaints regarding warranties, repair parts availability and other problems.

Alberta. Activities of the Department are co-ordinated by an executive committee made up of the directors of its seven divisions, the Deputy Minister, three assistant deputy ministers and the Director of Administration. In addition, the Policy Formulation and Liaison Secretariat, through consultation with agribusiness, farm organizations, researchers, etc., advises the Department on requirements for future planning and policy.

The Marketing Division develops programs and policies that support all sectors of the marketing chain for Alberta's agricultural products. Within this Division there are four "action oriented" sections: the market development section emphasizes both export and

domestic market expansion, and provides market information; the product development section encourages and supports the development of new foods manufactured from Alberta farm products; the commodities section works with producer commodity groups concerned with marketing; and the nutrition and food marketing section provides consumer education programs primarily in the urban areas. A fifth section, known as market intelligence, supports the other four sections by providing statistical and analytical data on all segments of the Alberta food industry.

Two developmental divisions of the Alberta Department of Agriculture are responsible for policies and programs that will ensure the survival of the family farm and promote the interests of rural communities. The Extension Division co-ordinates the extension programs of every division of the Department. In association with other extension agencies, it leads in formulating and implementing district and regional programs for agriculture, family living and community development. It operates mainly through 57 district extension offices co-ordinated by six regional directors, complemented by an expanding staff of regional specialists in livestock, plant industry, engineering and home economics; leadership training is also provided. Within the Family Farm Division are several branches dealing with land management, engineering and home design, municipal services and surface rights, as well as the Alberta Agricultural Development Corporation which guarantees or makes loans for the development of agricultural enterprises.

The Plant Industry Division administers programs and policies relating to crop improvement, crop protection and pest control, weeds, soils and fertilizers, horticulture, apiculture and special projects. It operates a crop clinic in Edmonton, a horticultural research centre at Brooks, and an extensive tree nursery at Oliver which supplies millions of trees yearly for farm planting and reforestation.

The Animal Industry Division administers legislation, policies and programs in the broad area of livestock, dairy and poultry production and in processing and marketing. Included are: setting standards for and approving public sales of sires, record of performance programs for standards and qualifications for the artificial insemination (AI) industry; supervising feeder associations; brand registration and inspection; licensing of butchers, livestock dealers, stockyard and AI technicians; pound districts and sale of horned cattle. The testing, grading and purchasing of raw produce by all dairy plants are under regulation, as are standards of construction, manufacture, processing, sanitation and temperature control for dairy and frozen-food plants. A regular cow-testing service to provide the basis for breeding, feeding and culling dairy cattle is available to dairy producers, and chemical and bacteriological analyses are conducted for industrial directives. Licences are issued to poultry hatcheries, wholesalers, first receivers and truckers, and programs are conducted for control of pullorum-typhoid diseases of chicken- and turkey-hatching egg supply flocks. Extension programs, cost studies, disease tests and surveys, and research projects with respect to poultry, are also carried out.

The Veterinary Services Division provides diagnoses of livestock and poultry diseases and conducts investigations of disease conditions; provides lecture service for the University of Alberta and for other groups; promotes policies aimed at reducing losses such as vibriosis and mastitis control, stockyard inspection and swine health programs; administers regulations concerning live fur-bearing animals and pelts; and assists fur farmers in care, management and stock improvement.

The Irrigation Division provides professional and technical assistance to farmers in irrigation districts to encourage and ensure the economic viability of irrigated farm units by better conservation and management of the land, water, labour and capital resources available; its functions also include recommending policies and implementation of programs related to over-all irrigation system improvement.

British Columbia. The Department of Agriculture comprises four divisions: Administration, Production and Marketing, Special Services and General Services. Administration includes Accounts and Personnel. The Production and Marketing Division embraces the Markets and Statistics, Poultry, Field Crops, Horticulture, Apiculture, Farm Business Management, Extension and Livestock Branches. Special Services includes the Engineering, Soils, Entomology, Plant Pathology, Veterinary, Dairy and Youth Development branches. The remaining branches — Information Services, Farm Finances, Agricultural and Rural

Development Act (ARDA), Agricultural Education, Agricultural Credit, Agricultural Industry Development and Property Management — are grouped under General Services Division. The British Columbia Milk Board and the Executive Officer report directly to the Deputy Minister.

In addition to the headquarters staff at Victoria, the Department maintains 19 district offices in various parts of the province, a veterinary laboratory and poultry-testing station at Abbotsford, a beef-testing station at Kamloops and dairy and entomology laboratories at Vancouver and Cloverdale respectively; soil-testing facilities are installed at Kelowna.

11.3.2 Agricultural schools

All of the provinces of central and western Canada have agricultural colleges associated with universities giving courses leading to degrees in agricultural science and home economics and also providing postgraduate courses; the University of British Columbia has a faculty of Agricultural Sciences; Ontario, Quebec and Saskatchewan have veterinary colleges. In addition, all of these provinces have schools of agriculture or diploma courses offering basic training to young people intending to return to farms or interested in employment in businesses allied with agriculture.

In Alberta three agricultural colleges offer a variety of programs. In Quebec agricultural science is taught at McGill and Laval universities. The Department of Education offers a course in farm management and operation at two CEGEPs, and 15 school boards offer vocational training in agriculture in secondary schools. Also, the Quebec Department of Agriculture operates two institutes of agricultural technology. The Education and Research Division of the Ontario Ministry of Agriculture and Food offers five diploma-course programs at the Ontario Agricultural College, University of Guelph, as well as at the colleges of agricultural technology at Centralia, Kemptville, New Liskeard and Ridgetown. In the Atlantic provinces, agricultural education is centred in the Nova Scotia Agricultural College at Truro, NS. This College provides the first two years of a BSc program in Agricultural Science (three years in Agricultural Engineering) with the final two years provided by other faculties in eastern Canada. In addition, the College offers several technical programs associated with farming and agribusiness and a variety of vocational courses designed to update farmers and other industry personnel.

11.4 Yearly statistics of agriculture

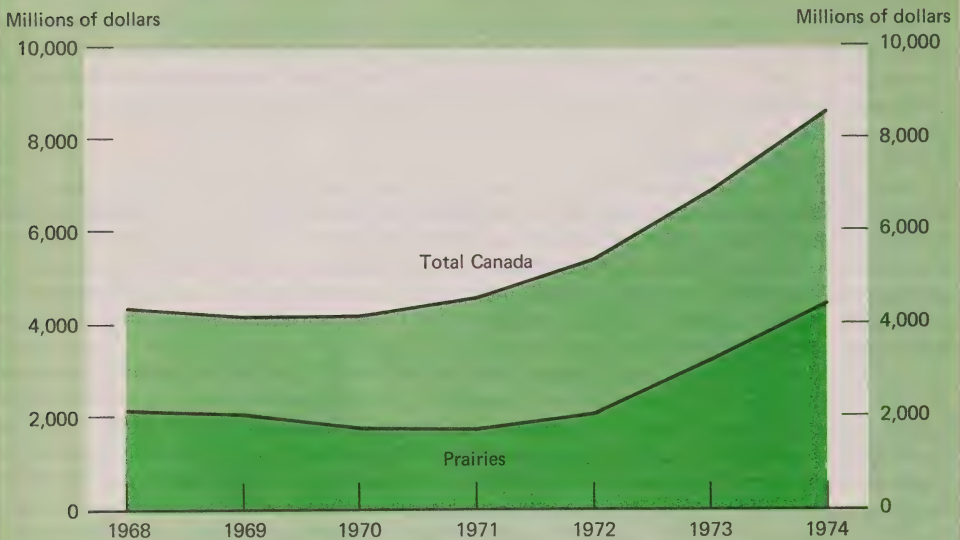
The collection, compilation and publication of statistics relating to agriculture is the responsibility of Statistics Canada. Valuable information is obtained through the censuses, through partial-coverage mailed questionnaire surveys and from the administrative records of government operations.

Statistics Canada collects and publishes primary and secondary statistics of agriculture on an annual and monthly basis. The primary statistics relate mainly to the reporting of crop conditions, crop and livestock estimates, wages of farm labour and prices received by farmers for their products. The secondary statistics relate to farm income and expenditure, per capita food consumption, marketing of grain and livestock, dairying, milling and sugar industries and cold storage holdings. In the collection of annual and monthly statistics, the Canada Department of Agriculture and various provincial departments, as well as such agencies as the Canadian Grain Commission and the Canadian Wheat Board, contribute statistical data and aid directly in Statistics Canada survey work. Many thousands of farmers throughout Canada send in reports voluntarily and dealers and processors also provide much valuable data. The figures contained in this Section do not include estimates for Newfoundland; agriculture plays a relatively minor part in Newfoundland's economy and commercial production of most agricultural products is quite small. In the following Subsections details are given for the most recent year available with earlier comparisons; figures for the latest year are subject to revision and it should be noted that many of those given for earlier years have been revised since the publication of the *1974 Canada Year Book*.

11.4.1 Farm income

Cash receipts from farming operations. Estimates of cash receipts from farming operations include data concerning cash receipts from the sale of farm products, Canadian Wheat Board

Total farm cash receipts, 1968-74



participation payments on previous years' grain crops, cash advances on farm-stored grains and deferred income from the sale of grain in western Canada, deficiency payments made by the Agricultural Stabilization Board and supplementary payments. Farm cash receipts from the sale of farm products include the returns from all sales of agricultural products except those associated with direct inter-farm transfers. The prices used to value all products sold are prices to farmers at the farm level; they include any subsidies, bonuses and premiums that can be attributed to specific products but do not include storage, transportation, processing and handling charges which are not actually received by farmers.

Total cash receipts from farming operations for 1974, excluding supplementary payments, are now estimated at \$8,527 million for Canada, 26.7% above the revised value of \$6,729 million in 1973 (Table 11.1). This gain can be attributed to continued expansion in cash receipts from the sale of crop products. The most notable increases occurred in sales of western grains. Returns to livestock did not show as much strength in 1974. Although increases were recorded in receipts from dairy, poultry and eggs, it is estimated that the 1974 value of cattle and hog sales declined (Table 11.2).

Farmers also received supplementary payments amounting to \$24 million during 1974, down considerably from the \$72 million received during 1973. These payments included those made under the provisions of the Prairie Farm Assistance Act, the Lower Inventory for Tomorrow (LIFT) program, the two-price wheat program, cash grants paid to farmers in Quebec and Ontario under the rain damage program and to farmers in Alberta and British Columbia under the Western Emergency Assistance program. Total cash receipts from farming operations and supplementary payments in 1974 amounted to \$8,550 million, 25.7% above the estimate of \$6,801 million recorded in 1973.

Farm net income. Two different estimates of farm net income from farming operations are prepared by Statistics Canada. Realized net income is obtained by adding together farm cash receipts from farming operations, supplementary payments and the value of income in kind, and deducting farm operating expenses and depreciation charges. This estimate of farm net income therefore represents the amount of income from farming that operators have left for family living, personal taxes and investment. The second estimate is referred to as total net income and is obtained by adjusting realized net income to take into account changes occurring

in inventories of livestock and stocks of field crops on farms between the beginning and end of the year. This estimate is used in calculating the contribution of agriculture to the "income" component of the system of national accounts and for making comparisons with net income of non-farm business enterprises (Table 11.3).

It is estimated that in Canada (excluding Newfoundland), realized net income of farm operators from farming operations amounted to \$3,471.4 million in 1974, a 28.3% increase over the revised 1973 amount of \$2,706.4 million.

Contributing to this increase in realized net income was an estimated 24.4% expansion in realized gross income to \$9,300.4 million in 1974 from the 1973 figure of \$7,478.2 million. All components of gross income contributed to the increase with the largest, cash receipts from the sale of agricultural products, rising by 26.7% in 1974.

Farm operators incurred operating expenses and depreciation charges totalling an estimated \$5,829.0 million, 22.2% above the 1973 value of \$4,771.8 million. Although expenditures on most farm input items were substantially above the 1973 levels, the leading contributors to the increase in expenses were feed, fertilizer and other crop expenses.

Total farm net income from farming operations (realized net income adjusted for inventory changes) is estimated at \$3,399.6 million for 1974. In 1974 a \$71.8 million reduction in inventories was recorded, in contrast to a positive change in 1973 of \$637.6 million. This contraction in inventories was due partly to a decrease in farm-held stocks of grains in the Prairie region.

11.4.2 Field crops

Canada's 1974 wheat crop, estimated at 522.5 million bu, was 13.6% below the 1973 crop of 604.7 million bu and 2.0% below the 1972 crop of 533.3 million bu. The average yield per acre at 22.3 bu was 10.1% less than the 1973 yield of 24.8 bu and 10.8% less than the 1972 yield of 25.0 bu. The average protein content of the 1974 crop of hard spring wheat was 13.5%, higher than the 1973 level of 13.3% and the 1972 level of 13.0%.

Acreages, yields and prices of the principal field crops for the years 1970-74, with averages for 1965-69 are shown in Table 11.4; acreages and production of field crops by province for 1973 and 1974 in Table 11.5 and acreages and production of grain in the Prairie provinces for the years 1970-74 in Table 11.6. Table 11.7 shows the stocks of Canadian grain on hand in Canada and in the United States on July 31 for the years 1971-73 with averages for the 10-year period 1961-70.

11.4.3 Livestock and poultry

The total number of cattle and calves in Canada, excluding Newfoundland, at June 1, 1974 was estimated at 15.0 million head, compared to 14.1 million head at June 1, 1973, a record for this time of year. (The 1971 Census counted 7,138 cattle in Newfoundland.) Milk cows (two years and over) were estimated at 2.1 million head, down from 2.2 million head at June 1, 1973, continuing the trend toward reduced dairy herds that began about 20 years ago. Total numbers of cattle in Canada have been increasing since 1958, reflecting the growing importance of beef production. Cattle slaughtered in federally inspected packing plants in 1974 amounted to 3.0 million head, up from 1973. Calf slaughter, at 392,811, was up from 291,524 for 1973 (Table 11.8).

Exports of cattle and calves in 1973 were 426,350, up from 299,625 in 1972. Imports, at 229,505 head (228,221 from the United States), were up by 213%. Beef exports (cold dressed carcass weight equivalent) increased slightly from 164 million lb. in 1972 to 167 million lb. in 1973. Beef imports, however, decreased from 215 million lb. in 1972 to 208 million lb. in 1973.

The Canada Department of Agriculture reported that the weighted average price of A1 and A2 steers at Toronto for 1974 was \$49.37 compared to \$46.56 in 1973 and \$36.28 for the 1969-73 average.

The June 1, 1974 estimate for the total number of pigs in Canada was just over 6.5 million, a slight decrease from the previous year. (The 1971 Census estimates the number of pigs in Newfoundland at 14,639.) Pigs slaughtered in federally inspected and approved plants in 1974 numbered 9.3 million compared to 9.0 million in 1973 as reported by the Canada Department of Agriculture. The weighted average price at Toronto (dollars per cwt for index 100 pigs, dressed) in 1974 was \$50.29 compared to \$54.66 in 1973 and \$37.15 for the 1969-73 average.

The number of sheep and lambs on farms at June 1, 1974 was estimated at 783,500, down from 832,500 at June 1, 1973. (Newfoundland figures for 1971 were 9,384 sheep.) Sheep and lambs slaughtered in federally inspected packing plants in 1974 totalled 185,077 down from 234,206 in 1973. Imports of live animals also increased from 44,016 in 1972 to 61,083 in 1973 due to higher imports from the United States. Imports of mutton and lamb, on the other hand, decreased from 81.5 million lb. in 1972 to 59.3 million lb. in 1973.

The estimated number of laying hens on farms at June 1, 1974 was 25.3 million compared to 25.7 million at June 1, 1973. Production and consumption of poultry meat are shown in Table 11.9.

11.4.4 Dairying

The number of dairy cows on farms in Canada has been declining gradually for several years. In spite of rising production per cow, total milk production fell by 4.48% to 16,885 million lb. in 1973 and by a further 1.27% to 16,670 million lb. in 1974 (Table 11.10). Production is concentrated in central Canada; Quebec and Ontario accounted for 74% of total production in 1974.

Table 11.11 shows that the farm value of milk production in Canada for 1974 was \$1,155.9 million, an increase of approximately 26.8% over 1973. The value of milk used in factories in 1974 was \$562.9 million (49% of total production) and fluid milk sales amounted to \$536.7 million (46% of total production).

Production of creamery butter, which in 1974 amounted to 232.1 million lb. and required 33% of the total national milk output, represents a decline of 8.0% from the 1973 figure (Table 11.12). Quebec accounted for almost half of the total output, followed by Ontario with 32%. Per capita consumption, shown in Table 11.13, was 12.9 lb., slightly lower than in 1973.

The total production of factory cheese (Table 11.12) for 1974 was 272.0 million lb. compared with 248.9 million lb. for 1973, and per capita consumption (Table 11.13) of all varieties of cheese, excluding cottage cheese, was 15.2 lb. compared with 14.4 lb. for 1973. Ontario accounted for 37% of the output and Quebec 52%.

Total production of concentrated whole milk products, which includes condensed milk, evaporated milk, whole milk powder, partly skimmed evaporated milk and others, decreased 5.4% from the previous year. Total production of concentrated milk by-products, which includes condensed skim milk, evaporated skim milk, skim milk powder, buttermilk powder, whey powder, casein and others, decreased 0.5% from 1973.

11.4.5 Horticultural crops

Fruits and vegetables. The fruit and vegetable industry is an important part of the agricultural and food distribution sectors of the economy. Fresh and processed fruits and vegetables account for more than one third of the quantity of all food consumed in Canada. There are over 25 fruit and vegetable crops (potatoes excluded) grown commercially in Canada with an annual farm value of over \$200 million.

The most important fruit grown in Canada is still the apple. Commercial apple orchards are found in Nova Scotia, New Brunswick, southern Quebec, much of Ontario, and the interior of British Columbia, particularly in the Okanagan Valley. Tender tree fruits — pears, peaches, cherries, plums — are also grown in Ontario, with the most important concentrations in the Niagara Peninsula and in Essex County. These fruits, as well as apricots, are also grown on a large scale in the southern part of the Okanagan Valley in British Columbia.

Strawberries and raspberries are cultivated commercially in the Maritimes, Quebec, Ontario and British Columbia. British Columbia fruit growers also produce loganberries commercially in the lower mainland and on Vancouver Island. Grapes also are grown in the Niagara district of Ontario and on a smaller scale in British Columbia. The native blueberry is found wild over large areas in Canada and is harvested in commercial quantities in the Atlantic provinces, Quebec and Ontario. A cultivated crop is grown in British Columbia. Table 11.14 shows the estimated commercial production and farm value of fruit grown in 1972-74. The production of field-grown vegetables in Canada is seasonal. During the winter when no domestic vegetables are being harvested, except in greenhouses, supplies of most fresh vegetables are imported from the United States. During the growing season a large percentage

of the domestic requirements are met from Canadian crops. Some vegetables are exported from Canada, particularly to a few large centres of population in the United States close to the border. Potatoes are the most important vegetable produced in Canada. Production slightly exceeds consumption and normally about 5% is exported. Table 11.15 presents the estimated commercial acreage and production of vegetables in 1971-73 with average for 1966-70.

The processing industry plays an important part in the marketing of Canadian-grown fruits and vegetables. Over the years factories have been built in most of the important growing regions and considerable proportions of fruit and vegetable crops are canned, frozen or otherwise processed each season, especially asparagus, beans, peas, corn and tomatoes. In recent years the importance of freezing has been increasing. Most vegetables for processing are grown under a system whereby the processor contracts annually with each grower for certain acreages.

The processing of canned tender tree fruits has declined considerably and imports have increased rapidly. Over the past 25 years the tonnage and value of exported vegetables has varied considerably but there is a slight upward trend. However, in the same period vegetable imports have doubled.

In recent years the supply of fruits available for consumption in Canada had remained relatively unchanged, but 1973 experienced a noticeable increase. The vegetables, which showed a decline in 1972, showed a slight upward trend. The per capita domestic disappearance of all fruits for 1973 of 271.2 lb. (fresh equivalent weight) was 8.8% higher than the five-year (1967-71) average of 249.3 lb. Of this total, 123.9 lb. per capita were fresh, 30.4 lb. were canned, 3.0 lb. were frozen, 40.6 lb. were made into juice and 13.7 lb. were dried. Per capita disappearance of vegetables, excluding potatoes, was 115.8 lb. for the same period, almost identical to the five-year (1967-71) average of 115.5 lb. Per capita disappearance of vegetables averaged 75.8 lb. of fresh vegetables, 19.7 lb. of canned vegetables and 6.5 lb. of frozen vegetables in 1973 (fresh equivalent weight). There were 544.5 lb. of fruits and vegetables, including potatoes, available per capita for consumption in Canada in 1973.

Honey. As shown in Table 11.16, honey production in 1974 was below that of 1973. Honey is produced commercially in all provinces except Newfoundland and yields vary to some extent from year to year. Alberta is consistently the largest producer, accounting for almost 40% of the total output. Honey bees are used in some fruit-growing districts for pollination and are also used for pollination of certain seed crops. To facilitate storage, shipment and uniformity of quality, large quantities of Canadian honey are pasteurized. Beekeepers' marketing co-operatives are active in several provinces. In 1973 Canada exported 16.1 million lb. of honey valued at \$6.7 million, 5.3 million lb. more than the quantity exported in 1972. Exports went mainly to the United Kingdom, the United States, France, the Federal Republic of Germany, Japan and the Netherlands.

Sugar beets and beet sugar. Sugar beets are grown commercially in Quebec, Manitoba and Alberta and beet sugar factories are located in these provinces. In Quebec, commercial production is centred in the St-Hilaire area of the Eastern Townships; Alberta, where sugar beets are grown under irrigation, produces the largest crop. Acreage, yield and value of sugar beets for the years 1970-74 are shown in Table 11.17, together with quantity and value of shipments of beet sugar.

Maple sugar and maple syrup. Maple syrup is produced commercially in Nova Scotia, New Brunswick, Quebec and Ontario. The bulk of the crop comes from the Eastern Townships of Quebec, a district famous in both Canada and the United States as the centre of the maple products industry. Virtually all of the maple products exported go to the United States with the larger proportion moving as sugar, although substantial quantities of syrup are also shipped. Much of the syrup sold in Canada is marketed in one-gallon cans direct to the consumer from the producer, but a considerable amount of both sugar and syrup is sold each year to processing firms. Production and value of maple sugar and maple syrup, by province, are shown in Table 11.18.

Greenhouse operations. The total area operated under glass and plastic in 1972 and 1973 amounted to 35.8 million sq ft and 34.3 million sq ft, respectively, while the total value of growers' sales stood at \$76.9 million in 1972 and \$83.3 million in 1973.

Nursery industry. In 1973 the nursery trades industry had a total revenue of \$65 million. Approximately 43% of this represents grower sales of traditional fruit and nursery stock and 33% was earned by supplying the increasing demand for contracted services.

Eggs. Table 11.19 shows production and value of farm eggs by province. Egg production totalled 459.9 million dozen in 1974, 0.4% less than the 461.7 million dozen produced in 1973. The number of layers decreased in 1974 over 1973. The rate of lay per 100 layers rose to 21,802 from 21,515 and the farm selling price of eggs averaged 61.8 cents a dozen compared with 55.3 cents a dozen in 1973. The Atlantic provinces produced 8.4% of all eggs in 1974, Quebec 14.0%, Ontario 41.2%, the Prairie provinces 24.4% and British Columbia 11.9%.

Wool. Estimates of production of shorn wool in 1974 at 3.2 million lb. were 0.5% lower than 1973. Average farm price per lb. was 70.9 cents for 1973 compared to 31.4 cents in 1972.

Tobacco. The total acreages planted in 1974 as compared to 1973 declined in Quebec and in the Maritime provinces and increased in Ontario. The yields per acre were lower in Quebec, Ontario and in the Maritime provinces. Total production decreased from 257.3 million lb. in 1973 to 256.8 million lb. in 1974. The average value per lb. advanced from 78.8 cents in 1973 to 89.8 cents in 1974 (Tables 11.20 and 11.21).

No information is available on the production of cigarettes for domestic consumption but, on the basis of domestic sales reported to Statistics Canada by manufacturers, the number of cigarettes sold rose from 50,864.4 million in 1971 to 53,292.5 million in 1972 to 54,864.3 million in 1973 and to 57,122.8 million in 1974.

11.4.6 Prices of agricultural products

The index of farm prices of agricultural products (Table 11.22) was designed to measure changes occurring in the average prices farmers receive at the farm from the sale of farm products. In comparing current index numbers with those prior to August 1974, the following points should be considered. Prices of all western grains used in the construction of the index prior to that date are final prices; all later figures are adjusted initial prices only for wheat, oats and barley. Any subsequent participation payments will be added to the prices currently used and the index revised upward accordingly. Average cash prices of major Canadian grains are given in Table 11.23 and yearly average prices of Canadian livestock in Table 11.24.

11.4.7 Food consumption

The food consumption figures represent available domestic supplies of food which include production, stocks on hand at the beginning of the year, imports less exports, and stocks on hand at close of the period, as well as marketing losses and industrial uses. All calculations are made at the retail level of distribution, except for meats for which the figures are worked out at the wholesale stage. The amount of food actually eaten would be somewhat lower than indicated because of losses and waste occurring after the products reach the consumer.

All basic foods are classified under 14 main commodity groups. The total for each group is computed using a common denominator, for example: milk solids (dry weight) for the dairy products group; fat content for fats and oils; and fresh equivalent for fruits. Most foods are included in their basic form, that is, as flour, fat, sugar, etc., rather than in more highly manufactured forms.

The series in Table 11.25 represents the official estimates of yearly supplies of food moving into consumption, expressed in lb. per capita, for the years 1967-71 as an average for comparison with the years 1972 and 1973. Production of meats from slaughter in Canada, total supply, distribution and per capita disappearance of meats and lard are shown in Table 11.26. All estimates are on a cold carcass-weight basis except canned meats, which are in terms of product.

11.5 1971 Census of Agriculture

This Section presents a limited amount of information from the 1971 Census of Agriculture; details are contained in Volume IV — Parts 1, 2 and 3 of the 1971 Census of Canada. Volume IV, Parts 4 and 5 include some unique data resulting from the computer linkage of documents from the 1971 censuses of population and agriculture. The socio-

economic characteristics of farm operators and their households have been cross-classified with the agricultural characteristics of farming operations for all 1971 census-farms.

Number of census-farms. For both census years, 1971 and 1966, a census-farm was defined as a holding of one acre or more with sales of agricultural products valued at \$50 or more during the 12 months prior to the census. The number of census-farms in Canada declined 15% to 366,128 in 1971 from 430,522 in 1966, indicating an acceleration of the trend since 1941 toward an ever-decreasing number of census-farms (Table 11.27).

Farm areas. The total area of census-farms in 1971 was 169,668,614 acres, a 2.6% decrease from the 174,124,828 acres recorded in 1966 (Table 11.28). The Maritime provinces, Quebec and Ontario all reported significant decreases in farm acreage. Only Newfoundland, Alberta and British Columbia showed an increase, the increase in Newfoundland being due to the establishment of new community pastures. For Canada as a whole, the 108,148,877 acres of improved land for 1971 was virtually unchanged from the area recorded in 1966. The area of unimproved land decreased 6.8% to 61,519,737 acres in 1971 from 65,970,451 acres in 1966. Woodland, decreasing by 18.8%, accounted for the majority of this loss, while other improved land decreased 3.4%.

Economic classification of census-farms. Census-farms were divided into 12 economic classes according to the total value of products sold during the past calendar year (Table 11.29). Such a classification serves as a measure of the productive size of census-farms in Canada. The former division of census-farms into "commercial" and "small-scale" farms has been dropped, since what may be felt to be a commercial farm in one region might be considered small-scale in another. The group classified as "institutional farms, etc." includes experimental farms, community pastures and institutional-type farms regardless of the amount of sales of agricultural products.

Type of farm. Table 11.30 shows that, with the exception of farms classified as "institutional farms, etc.", all census-farms with sales of \$2,500 or more were classified as one of 10 major product types. A criterion of 51% or more of total sales was used for this classification. For example, a census-farm was typed as a poultry farm if 51% or more of the total agricultural sales for the farm was obtained from the sale of poultry products. However, it was classed as a dairy-type farm if 40% to 50% of total sales was obtained from dairy products, provided the sale of dairy products together with the sale of cattle and calves amounted to 51% or more of the total sales. Under these criteria, it was possible for a farm to qualify for more than one product type. To prevent this possibility, the 10 product types were given a priority rating in the order listed in Table 11.30.

Size of census-farms. In 1971, 49% of the census-farms in Canada contained less than 240 acres compared with 53% in 1966. This decrease in the number of small holdings again indicates the trend toward consolidation of farms into larger holdings. However, the wide variation in the distribution of farms by size between provinces continues. In the Atlantic provinces 71.8% of the census-farms were under 240 acres in size; in Quebec and Ontario 78.4% were under 240 acres; in the Prairie provinces only 17.9% fell below 240 acres; and in British Columbia the percentage was 78.5 (Table 11.31).

Age of census-farm operators. The proportion of census-farm operators under 35 remained at approximately 15% of the total. Similarly, the number of operators in the middle age groups, 35-54, remained at 52% and those in the older age groups, 55 and over, remained at 33% (Table 11.32).

Farm machinery. Table 11.33 indicates that between 1966 and 1971 farm trucks increased by 7.3%, swathers 12.6%, pick-up hay balers 11.6% and forage crop harvesters 17.3%. Decreases were reported for automobiles, 8.9%, tractors, 0.3% and combines, 4.4%.

11.6 International crop statistics

Tables 11.34 and 11.35 are based on estimates published by the Foreign Agricultural Service, US Department of Agriculture, and give the acreages and production of wheat and the production of oats and barley for the harvests of 1973 and 1974 with averages for the years 1968-72, in the leading grain-producing countries of the world.

11.7 The marketing of agricultural products

11.7.1 The grain trade

Minor modifications were made in delivery quota policies for the 1972-73 crop year. However, the general framework of the quota system introduced for the 1970-71 crop year remained unchanged.

The modifications introduced for the 1972-73 crop year were largely designed to give producers greater flexibility in adjusting quota acres assigned to specialty markets and allowed their quota acres for particular grains to be shifted from deliveries under regular quotas to specialty markets and vice versa. In the previous crop year producers were allowed to transfer quota acres only from specialty markets to regular quotas but not from regular quotas to specialty markets.

As a result of the heavy exports, producers were given the opportunity to deliver all their available grain well before the end of the crop year. Open delivery quotas were authorized for flaxseed and rye in early March 1973 and for rapeseed in early April. On April 30, 1973 open quotas for wheat, barley and oats were authorized in 22 shipping blocks. These quotas were gradually extended to other blocks and other grains as space permitted and on June 4, 1973, the Wheat Board removed the last remaining quota restrictions by placing the deliveries of all Prairie grains on an open quota. For additional details regarding delivery quota policies see Statistics Canada publication *Grain trade of Canada* (Catalogue No. 22-201). Supply and disposition of Canadian grain for the crop years ending July 31, 1972 and July 31, 1973 are shown in Table 11.36.

11.7.1.1 The 1972-73 crop year

Estimated domestic supplies of wheat, oats, barley, rye, flaxseed and rapeseed totalled 2,393 million bu in the crop year 1972-73, an increase of 11% over the 1971-72 total of 2,687 million bu.

Wheat. Domestic supplies of wheat in 1972-73 amounted to 1,117.1 million bu, 12% below the 1971-72 total of 1,263.7 million bu. The 1972 production of wheat was 533.3 million bu, 1% above the 529.6 million bu in 1971, and carryover stocks were 583.8 million bu compared with 734.2 million bu the previous year. Exports of wheat and flour in terms of wheat during the 1972-73 crop year, at 576.6 million bu, were 14% above the 503.8 million bu exported in 1971-72, 75% higher than the long-term average of 329.6 million bu and 37% more than the 10-year average of 420.7 million bu.

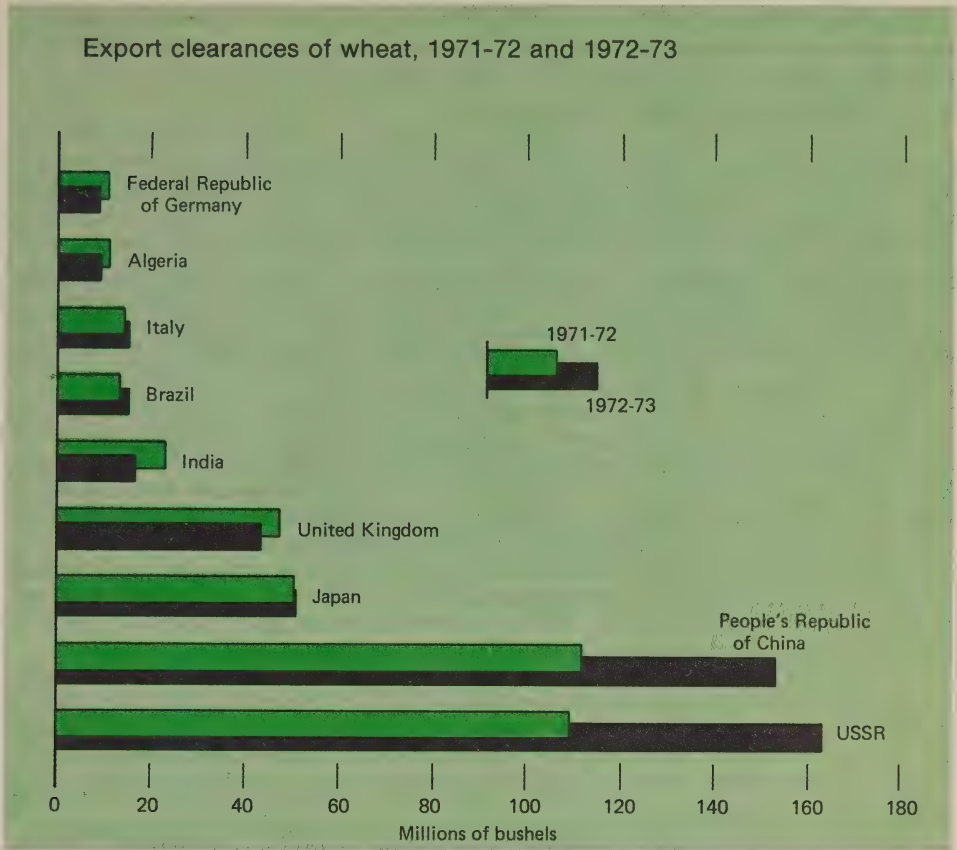
During the crop year 1972-73, marketing of western Canadian wheat was again conducted by the Canadian Wheat Board on a one-year Pool basis. The initial payment commenced the crop year at \$1.46 a bu basis No. 1 C.W. Red Spring in store Thunder Bay or Vancouver. On October 16, 1973 an adjustment payment of 30 cents a bu was announced by the Board being retroactive to August 1. On November 6, 1973 a final payment of .394 cents a bu was also announced involving the distribution of \$263.2 million on wheat delivered by producers during the 1972-73 crop year.

Grain exports. The 1972-73 exports of bulk wheat, at 552.8 million bu, were 74.7 million bu higher than the preceding year's total of 478.1 million bu and also above the recent 10-year average of 387.3 million.

The USSR with purchases of 147.9 million bu (a 62% increase from last crop year) was the largest market for Canadian wheat in 1972-73, receiving 30% of the export shipments. The People's Republic of China, destination of 144.1 million bu, fell to second position after four years as Canada's largest customer, notwithstanding that this figure is 44% higher than that recorded in 1971-72. Shipments to Japan — 50.6 million bu — approximated the 1971-72 clearances to maintain that country as the third largest market for Canadian wheat. Britain remained in fourth position with reduced imports of 42.9 million bu.

Exports of Canadian wheat flour during the 1972-73 crop year amounted to 10.2 million cwt (23.4 million bu of wheat equivalent), slightly below the 1971-72 total of 24.7 million bu.

Combined exports of oats, seed oats, barley, rye, flaxseed and rapeseed (including customs exports of oatmeal and rolled oats, malt in terms of grain equivalent) amounted to 250.4 million bu during the crop year 1972-73. This figure was 21% less than the comparable 1971-72 level of 320.2 million bu but sharply above the 10-year (1961-62-1970-71) average of



104.6 million bu. Exports of Canadian oats in bulk totalled 6.9 million bu during 1972-73, a decrease of 34% from the 10.5 million bu shipped during the previous year. United States was the principal market for this grain with purchases of 4.1 million bu. The Netherlands, at 1.1 million bu, was the largest overseas market. In addition, exports of Canadian oatmeal and rolled oats amounted to the equivalent of 38,000 bu in 1972-73 compared with 25,000 the year before.

Barley exports, at 156.8 million bu, were 22% below the 224.3 million bu of 1971-72. Italy remained Canada's best market for this grain with imports of 44.8 million bu. Japan was the second market with purchases of 41.0 million bu in 1972-73, a gain of 33% over 1971-72. The USSR was third, importing 26.5 million bu of Canadian barley, and Britain placed fourth with 11.0 million bu, 61% below the previous year. In addition to the exports of Canadian barley as grain, shipments of malt were the equivalent of 8.3 million bu, about 32% above the 1971-72 figure of 6.3 million bu.

Exports of Canadian rye during the 1972-73 crop year amounted to 8.2 million bu. Japan continued to be the principal market, importing 6.1 million bu in 1972-73.

During 1972-73, clearances of Canadian flaxseed moving overseas amounted to 19.6 million bu, 24% below the 25.7 million bu of 1971-72.

Although shipments of flaxseed to the Netherlands were only 47% of the previous year's total, it remained the largest single importer, purchasing 5.2 million bu. The Federal Republic of Germany (4.4 million bu) and Japan (4.3 million bu) were second and third. Shipments to the European Economic Community totalled 13.4 million bu (68%) of the total.

Exports of linseed oil were equivalent to about 1.2 million bu of flaxseed, the bulk of which was shipped to Britain. In the 1972-73 crop year, trade in rapeseed amounted to 54.1 million bu, reflecting an 11.5 million bu increase over last year's 42.6 million.

11.7.1.2 The International Wheat Agreement, 1971

The International Wheat Agreement (IWA) 1971 came into effect on July 1, 1971 to cover the period through June 30, 1974. It consists of two legal instruments: a Wheat Trade Convention and a Food Aid Convention. The International Wheat Council, established in London, England by the International Wheat Agreement, 1949, continued in being to administer the Wheat Trade Convention and provide service to the Food Aid Convention.

The Wheat Trade Convention. The Wheat Trade Convention, 1971 has three main features. The International Wheat Council continues as a forum for international consultation and co-operation and as an agency for the collection and dissemination of information on the world wheat situation. Second, it provides for continuous review of the world wheat market situation through the medium of the Advisory Sub-committee on Market Conditions. Finally, it does not contain any price revisions or related rights and obligations.

However, under Article 21 there is a requirement that the Council examine at an appropriate time the questions of prices and related rights and obligations, and, when it judges these matters capable of successful negotiation with the object of bringing them into effect within the life of this Convention to request the Secretary-General of the United Nations Conference on Trade and Development to convene a negotiating conference.

In the past the Council has considered the possibility of action under Article 21 but has not judged the issues capable of negotiation. In February 1974 the Council agreed to extend the International Wheat Agreement, 1971 by Protocols for one year to June 30, 1975. In February 1975 a further extension, to June 30, 1976, was approved.

Despite the absence of price provisions and related rights and obligations, the International Wheat Council continued operating within the framework of the IWA. During the 1974-75 crop year (July-June) 39 importing countries and nine exporting countries plus the European Economic Community (EEC) participated in the Agreement. The EEC, which both imports and exports wheat, is listed simultaneously in the Convention as an exporting country and as an importing country.

IWA member countries are involved, either as importers or exporters, in over 90% of the total world trade, commercial and non-commercial, of wheat and flour. Commercial sales by member exporting countries to member importing countries in 1973-74 amounted to 1,032 million bu. This was 45% of total world trade in wheat and flour, an increase of seven percentage points over the 1972-73 figures of 946 million bu sold and 38% of world trade.

The Food Aid Convention. Eight countries plus the enlarged EEC were members of the Food Aid Convention. Over-all commitments (including in some cases cash contributions or ocean freight contributions) represented the equivalent of approximately 4.1 million tons of wheat in 1972-73, and 4.2 million tons in 1973-74. Canada's 1972-73 contribution was 216,802 tons (8.0 million bu) in excess of her obligation of 495,000 metric tons (18.2 million bu), and 4,419 tons (162,372 bu) in excess of its obligation in 1972-73.

Commodities shipped under the Food Aid Convention were wheat, wheat flour, bulgur, corn, cornmeal, sorghum, rolled oats, rolled wheat, oats, barley and rice, as well as agricultural materials.

During the 1972-73 crop year the Secretariat of the International Wheat Council, in co-operation with all members of the Council, prepared a forecast of the supply and demand for wheat for the up-coming year, 1973-74. This service will be continued.

In view of the widespread support for an improved International Wheat Agreement in 1975 the Council appointed a Preparatory Group whose terms of reference were to examine the possible bases for a new international arrangement to replace the International Wheat Agreement, 1971, and report to the Council.

11.7.1.3 Miscellaneous grain trade statistics

Lake shipments of grain. The 1973 navigation season opened at the Canadian Lakehead on April 4 and closed on January 20. Details of lake shipments for 1972 and 1973 are given in Table 11.37.

Licensed grain storage. Total grain storage capacity in Canada, licensed under the provisions of the Canada Grain Act by the Canadian Grain Commission, amounted to 667.4 million bu at December 1, 1972, compared with 685.4 million bu at the same date in 1971 (Table 11.38). On July 31, 1973, 52.6% of the licensed storage capacity was occupied as compared with 54.7% on the same date of 1972.

Production and exports of wheat flour. Production of wheat flour in the 1973-74 crop year amounted to 37.4 million cwt and wheat milled for flour totalled 84.7 million bu; both were below the corresponding totals for 1972-73. Of the wheat milled for flour, approximately 68.6 million bu were western Canadian spring wheat (other than durum) and the remainder was made up of 6.9 million bu of Ontario-grown winter wheat, 5.2 million bu of durum wheat and 3.9 million bu of other types. Utilization of milling capacity, based on a daily operating potential of some 167,000 cwt, averaged 74.4% in 1973-74 compared with 76.0% in the previous year. Figures for the crop years ended July 31, 1971-74, including exports of wheat flour, are given in Table 11.39.

11.7.2 Livestock slaughter

Cattle slaughtered at federally inspected packing plants amounted to 2,975,833 head in 1974, up 3.4% from 2,878,016 head in 1973. All provinces showed increases except Quebec and the Atlantic provinces.

Calves slaughtered at federally inspected packing plants amounted to 392,811 head in 1974, up 34.7% from 291,524 head in 1973. Increases occurred in all provinces.

Federally inspected pig slaughtering totalled 9,269,491 in 1974, up 2.5% from 9,041,220 in 1973. Increases occurred in all provinces except Manitoba, Alberta and the Atlantic provinces.

Sheep and lambs slaughtered in 1974 totalled 185,077 compared to 234,206 in 1973. Decreases occurred in all provinces except the Atlantic provinces.

11.8 Government aid and controls

11.8.1 The role of government in the grains industry

Government's interest and involvement in the grains industry predates Confederation and is a record of policies relating to land use and settlement; transportation; grain elevators, storage, handling and forwarding; marketing methods and opportunities; income security; and the many ramifications of international competition and the search for international co-operation in the sale of grain. The federal government's role in the grains industry is carried out by the Department of Agriculture, the Department of Industry, Trade and Commerce and two semi-autonomous bodies which report to Parliament through Ministers of the Crown: the Canadian Grain Commission and the Canadian Wheat Board. The Minister responsible for the Canadian Wheat Board is the Minister designated as being primarily responsible for federal government grains policy, at present the Minister of Justice.

Three other agricultural agencies also play integral roles in the Canadian grains industry: the Canadian International Grains Institute, the Canada Grains Council and the Special Advisory Group on Grains (Grains Group). The Canadian International Grains Institute contributes to the maintenance and expansion of markets for Canadian grains and oilseeds and their products in Canada and abroad. The Canada Grains Council provides a forum for co-ordination, consultation and consensus on industry recommendations to government. The Special Advisory Committee on Grains (Grains Group) is charged with co-ordinating, reviewing and recommending federal policies on grains.

11.8.1.1 Grains Group

In 1970 the Minister responsible for the Canadian Wheat Board organized the Special Advisory Group on Grains (known as the Grains Group) made up of policy advisers representing the Department of Agriculture, the Department of Industry, Trade and Commerce and the Ministry of Transport. Under the Minister's direction the Grains Group examines the problems of the grains industry in the areas of production, transportation and handling, and marketing. It proposes measures to adjust grains production to known and projected markets, identifies and develops market opportunities, and stimulates more efficient handling and transportation of grain of the types and quantities required to meet domestic and

export market demands. It also co-ordinates, reviews and recommends federal policies for grains and grain production. Implementation of recommended policies subsequently adopted by the government is through government departments or other agencies concerned with the grains industry.

Production. The Canada Department of Agriculture conducts a research program in plant breeding and production methods to improve varieties, yields and quality of grains for which there is a domestic and export demand. A recent innovation has been the provision, well in advance of spring planting, of information on initial prices to be guaranteed to farmers for the new crop of wheat, oats and barley, and on minimum deliveries to be accepted by the Canadian Wheat Board during the crop year. These are announced by the Minister responsible for the Canadian Wheat Board in March of each year.

The Grains Group developed the Two-Price Wheat Program which will remain in effect until mid-1980.

Transportation and handling. A freeze on the abandonment of railway track in the Prairie network was declared by the federal government in 1967. Modifications were made effective in 1975, following expiry of the freeze at the end of 1974. There are 19,221 miles of rail lines on the Prairies. Under new Orders in Council 12,413 route miles were declared basic railway network and applications for abandonment are prohibited until the year 2000. The railways are now free to apply to abandon 525 route miles which are no longer used. The balance of the network, about 6,300 miles, will be the subject of regional inquiries to determine their status and future.

Additional studies are scheduled to consider the action required to modernize the grain handling and transportation system.

Marketing. To broaden the assistance provided for sales and market development of grains, oilseeds and products, the pertinent services of the Department of Industry, Trade and Commerce are consolidated in the Grain Marketing Office. Regular contact is maintained with the Canadian Wheat Board, other agencies and organizations concerned with grain marketing, trade commissioners abroad and the private trade sector. A program of trade promotion that includes participation in missions and trade fairs abroad is also maintained.

The Grains and Oilseeds Marketing Incentives Program provides assistance in the form of cost or risk sharing to a variety of projects designed to increase the sales of grains, oilseeds and their derivatives. Assistance is normally provided to worthwhile projects which would not be realized without incentives. Canadian companies, agencies, industry associations, universities, institutes and similar bodies are qualified applicants. Projects implemented or under consideration cover various fields, including grain handling, storage, processing, market testing of products, developing new products or processes, feeding trials and demonstrations and feasibility studies related to expansion of exports of grains, oilseeds and their products.

With the co-operation of the processing industry, provincial governments and universities, a \$5 million pilot plant in Saskatoon is due to open in 1976. The POS Pilot Plant Corporation (Protein, Oil and Starch) is a non-profit corporation (directed by subscribing members) which provides unique pilot-plant facilities to the Canadian grains and oilseeds processing industry.

Credit. Canada has been selling grain on credit since 1952. The original program provided for grain sales on terms of up to three years at commercial rates of interest. In 1968 the government approved a broadened and improved program for the sale of Canadian grain on credit to improve its competitive position in export markets. The new program allowed exporters to respond quickly to export opportunities in developing countries on more favourable credit terms in some circumstances.

Most credit sales of western grains are on terms of three years or less, financed under Section 12 of the Canadian Wheat Board Act with a government guarantee. Credit sales of other than the western wheat, oats and barley which are marketed by the Wheat Board, or any sales on terms of more than three years, are insured under Section 27 of the Export Development Act. In the 1973-74 crop year 117 million bu of wheat and flour, more than one quarter of total Canadian wheat exports, were sold on credit.

Food aid. The Canadian Food Aid Program has expanded from \$2 million in 1962-63 to more than \$180 million in 1974-75. Since 1963 food aid under bilateral and multilateral aid programs has been administered by the Canadian International Development Agency. Most of the food consists of wheat and wheat products, but \$18-20 million is usually spent on rapeseed and rapeseed oil for India and Bangladesh. In addition Canada makes regular contributions of flour, averaging \$1 million in value, to the United Nations Relief and Works Agency for Palestinian refugees. In the past about 80% of our total food aid was given to foreign governments under bilateral programs with the remaining 20% going through multilateral channels, mainly the World Food Programme. Over the last 10 years more than 72 different countries have received food aid from Canada.

At the World Food Conference in Rome in November 1974, Canada pledged the allocation of 1 million metric tons of grain annually for three years, more than double Canada's previous commitment of 495,000 metric tons per annum under the Food Aid Convention. A commitment to substantially increase other types of food aid was also made. The estimated total value of this aid in 1975-76 is approximately \$45 million.

11.8.1.2 The Canadian Grain Commission

The Canadian Grain Commission was established by the Canada Grain Act on April 1, 1971. It replaced the Board of Grain Commissioners for Canada which was originally established by the Canada Grain Act of 1912. It is composed of a Chief Commissioner and two commissioners and is under the jurisdiction of the Canada Department of Agriculture. Headquarters of the Commission is at Winnipeg and other offices are situated across Canada, with the largest units at the port areas of Vancouver, Thunder Bay and Montreal.

The Commission is responsible for administration of the Canada Grain Act, including inspection, weighing and storage of grain; for fixing maximum tariffs for charges by licensed elevators; for establishing grain grading standards; and for operation of the Canadian government elevators at Moose Jaw, Saskatoon, Calgary, Edmonton, Lethbridge and Prince Rupert. All operators of elevators in western Canada and elevators in eastern Canada handling western-grown grain for export, as well as grain dealers in western Canada, must be licensed by the Commission and must file security by bond or otherwise as a guarantee for the performance of all obligations imposed upon them by the Canada Grain Act or by the Canada Grain Act Regulations. On a fee basis, the Commission provides mandatory official inspection, grading and weighing of grain, as well as registration of terminal elevator and eastern elevator receipts. The Economics and Statistics Division of the Commission is the basic source of information on grain handled through the Canadian licensed elevator system.

The Commission's Grain Research Laboratory conducts surveys of the quality of each year's grain crops and of grain moving through the Canadian elevator system. It provides information on the quality of varieties and grades of grain to the Inspection Division, collaborates with plant breeders in studies on new grain varieties and undertakes basic research in relation to quality characteristics of cereal grains and oilseeds. With the introduction of the protein factor in segregating wheat grades, the Commission has extended and decentralized its protein-testing facilities and is now able to test samples drawn from carlots of wheat and make the results known to terminal elevator operators prior to unloading cars at the terminals. The Laboratory monitors this protein testing to ensure uniformity among testing units, and also assists in testing the quality of cereals developed by plant breeders to determine the licensing potential of the variety.

The Commission has five assistant commissioners — one in Alberta, two in Saskatchewan, one in Manitoba and one in Ontario — who investigate complaints of producers and inspect licensed elevators in their respective provinces. All grain elevators with their equipment and stocks of grain may be inspected at any time by officials of the Commission.

The Commission sets up western and eastern grain standards committees which participate in establishing grain grades and grade specifications and recommend standard and export standard samples for various grades of grain. It also appoints grain appeal tribunals to hear appeals against the grading of grain by the Commission's inspectors; decisions of these tribunals are final.

11.8.1.3 The Canadian Wheat Board

The Canadian Wheat Board was established under the Canadian Wheat Board Act of 1935 for the purpose of "marketing in an orderly manner, in interprovincial and export trade, grain grown in Canada". The legislation established the Wheat Board as the sole marketing agency for Prairie wheat, oats and barley sold interprovincially or internationally. With the introduction of a new domestic feed grains policy in August 1974, marketing of feed grains for domestic use was removed from Canadian Wheat Board jurisdiction and this grain is now traded on the open market. The Canadian Wheat Board remains the sole purchaser and seller of feed grains for export. Other crops, such as rye, rapeseed, flaxseed, buckwheat and mustard are marketed by the private grain trade.

The sale of Prairie-grown wheat, oats and barley is carried out through sales negotiated directly by the Wheat Board, or through grain exporting companies acting as its agents.

Delivery of the kinds, grades and quantities of grain needed by customers is essential to the Board's marketing program. This is accomplished in two stages: the first involves the delivery of grain by the producer from his farm to the local country elevator; the flow of grain from farms to country elevators is regulated under a delivery quota system which enables the Wheat Board to call for the delivery of the kind and grade of grain required to meet market commitments, and, at the same time, to allocate delivery opportunities equitably among all grain producers. The second stage involves the movement of grain from country elevators to large terminals in eastern Canada, at Thunder Bay, Churchill, and the west coast. The transportation of grain to terminals on the west coast, Thunder Bay and Churchill is carried out by the railways under maximum tariffs established under the terms of the National Transportation Act. The forwarding of grain from Thunder Bay to eastern positions is done largely by lake vessels under freight rates negotiated by the Wheat Board and by private shippers with lake vessel operators. Extensive planning and a high degree of co-ordination within the grain handling and transportation industry are required to carry out the complex task of moving grain from country elevators to forward positions. The Wheat Board, which co-ordinates the entire movement, programs rail shipments from country elevators to terminals on a weekly basis in accordance with sales requirements.

The producer selling to the Board receives payment for his wheat, oats and barley in two stages. An initial payment price is established by Order in Council before the start of a crop year; this price, less handling costs at the local elevator and transportation costs to Thunder Bay or Vancouver, is the initial price received by the producer and is, in effect, a guaranteed floor price. If the Wheat Board, in selling the grain, does not realize this price and the necessary marketing costs, the deficit is borne by the federal treasury; after the end of the crop year when the Board has sold all the grain or otherwise disposed of it in accordance with the Canadian Wheat Board Act, the Board, if authorized by Order in Council, makes a final payment to producers.

Since the implementation of the new domestic feed grains policy, a producer delivering his feed grains to a country elevator has the option of selling his grain to the Canadian Wheat Board or on the open market. A producer who sells his grain on the open market will, on delivery, receive a payment representing the final price he is to be paid for his grain in contrast to the Canadian Wheat Board system of initial and final payments.

Under the Prairie Grain Advance Payments Act, administered by the Board, producers may receive through their elevator agents interest-free cash advances on farm-stored grain in accordance with a prescribed formula. The purpose of this legislation is to make cash available to producers pending delivery of their grain under the quotas established.

To mitigate the effects of sharp price fluctuations on domestic wheat consumers, the federal government has implemented a two-price system for wheat. The system provides a guaranteed price to the domestic miller of \$3.25 for bread wheat used for domestic consumption. The government pays a subsidy of up to \$1.75 to the Canadian Wheat Board to bring the return to the producer up to a maximum of \$5.00. For durum wheat the millers pay between \$3.25 and \$5.75, depending on the world price. When the world price exceeds \$5.00 the government pays a subsidy of up to \$1.75 to bring returns to the producer up to a maximum of \$7.50 a bu. Thus the Canadian producer has a guaranteed floor price on domestic sales of milling wheat of \$3.25 a bu. Payments under the government subsidy represent the

difference between the domestic and export price for Canadian wheat. This payment represents the difference between the domestic and export price of Canadian wheat.

11.8.1.4 The Canadian International Grains Institute

The Canadian International Grains Institute was incorporated in July 1972; it operates in affiliation with the Canadian Wheat Board and the Canadian Grain Commission and financial responsibility is shared by the federal government and the Canadian Wheat Board. It is designed to contribute to the maintenance and enlargement of markets at home and abroad for Canadian grains, oilseeds and their products, and offers instructional programs to foreign participants selected from countries purchasing these commodities and to Canadians associated with the grain industry. Courses are offered in grain handling, transportation, marketing, flour milling, bread baking and macaroni manufacturing, and lectures and practical training are given in analytical methods used in processing and utilization of grains and oilseeds. The Institute is located in the Canadian Grain Commission Building in Winnipeg. Facilities include classrooms, conference rooms, offices, library, laboratories, a nine-ton, 24-hour-capacity flour mill and a pilot bakery.

11.8.1.5 The Canada Grains Council

The Canada Grains Council was established in 1969 to improve co-ordination and to assist in reaching agreement within the industry on recommendations to government. Its principal aim is to increase Canada's share of world markets for all grains and grain products and to effect their efficient utilization domestically. Membership in the Council is open to all non-governmental organizations and associations whose members are directly engaged in grain production, processing, handling, transportation or marketing.

The administrative costs of the Council are shared by the federal government and the industry members. The Council currently has 29 member organizations representing thousands of individuals. At least two general meetings are held each year; the Board of Directors meets about 10 times a year. The Council is served by a small secretariat.

11.8.2 Government involvement in other farm products

Governments in Canada at both the federal and provincial levels have from the beginning enacted measures to improve and expand the performance of the agricultural sector. Originally, the emphasis was on production increases and the control and eradication of pests and diseases. Gradually, however, with rising production and increasing specialization on the part of farmers, problems in marketing began to emerge.

To ensure quality, inspection and grading procedures and standards were established, but the periodic collapse of prices caused by bumper crops and intensified by the general inability of large numbers of producers to bargain on an equitable basis with far fewer buyers has been a much more difficult part of the marketing problem.

The first attempts to provide bargaining power to producers was the organization of voluntary marketing co-operatives. All provinces eventually passed legislation for incorporation of these co-operatives, and most of them also provided additional assistance in various forms. Federally, the introduction of the Agricultural Products Co-operative Marketing Act provided for financial guarantees to producers willing to market their crops on a pooling-of-returns basis. More information on co-operative organizations is given in Chapter 18.

Although much co-operative marketing was successful, particularly in the first years of incorporation, it was found that the voluntary aspect for many marketing co-operatives was a serious weakness. Many members dropped out in good times to make their own deals. A type of marketing organization was needed with the legal power to control the output of all producers of a certain product in a certain area, and as a result marketing control legislation was adopted providing for various types of boards and agencies.

11.8.2.1 Product controls

The federal and provincial departments of agriculture co-operate in establishing and enforcing grades of quality standards for various foods. Some control over size and types of containers used for distribution of agricultural products is exercised by the Canada Department of Agriculture, and the Department of Consumer and Corporate Affairs enforces regulations pertaining to weights and measures.

Standards related to health and sanitation in food handling are developed and enforced at all three levels of government — municipal, provincial and federal. Examples of provincial and municipal action include laws pertaining to pasteurization of milk, inspection of slaughter-houses and sanitary standards in restaurants. At the federal level, inspection by the Health of Animals Branch of the Canada Department of Agriculture of all meat carcasses that enter into interprovincial trade is required; the Foods and Drugs Directorates of the Department of National Health and Welfare have wide responsibility for food composition standards; and the Department of Consumer and Corporate Affairs has jurisdiction over advertising.

11.8.2.2 Marketing controls

The Agricultural Products Co-operative Marketing Act (RSC 1970, c.A-6) was passed in 1939 as a result of a federal government decision to assist orderly marketing by encouraging the establishment of pools that would give the producer the maximum sales return for his product, less a maximum margin for handling expenses agreed upon in advance. The Wheat Co-operative Marketing Act was passed at the same time but was in effect for only one year, and the Agricultural Products Co-operative Marketing Act now covers the marketing of all agricultural products except wheat produced in the Canadian Wheat Board area.

The purpose of this Act is to aid farmers in pooling the returns from sale of their products by guaranteeing initial payments and thus assisting in the orderly marketing of the product. The government may undertake to guarantee a certain minimum initial payment to the producer at the time of delivery of the product, including a margin for handling: sales returns are made to the producer on a co-operative plan. The guaranteed initial payment may be up to a maximum of 80% of the average price paid to producers for the previous three years, the exact percentage to be recommended by the Minister of Agriculture who enters into an agreement with the selling agency for the product. For 1974 crops, agreements were made for marketing winter wheat and beans in Ontario.

Milk control legislation was enacted in nearly all provinces prior to 1940. Most provinces finance these milk control agencies partly from public funds and partly through the collection of licence fees and assessments from those engaged in the fluid milk industry. Milk control agencies have the authority to license those engaged in the fluid milk industry and can revoke licences for failure to conform with agency orders.

In all provinces with such boards, the milk control board or similar agency sets the minimum price which distributors in specified markets pay producers for Class I milk, that is, milk actually sold for fresh fluid consumption. In British Columbia, a formula is used as a guide in determining minimum prices to producers. Most provinces set either minimum or maximum wholesale and retail prices for fluid milk. Quebec sets a minimum and maximum price range. Saskatchewan sets minimum prices applicable to all retail milk sales and maximum prices applicable to milk sales from retail wagons. Minimum prices are in effect in Alberta, Nova Scotia and New Brunswick. Maximum prices are set in Manitoba and no control is exercised over milk prices at the wholesale and retail levels in Ontario and British Columbia. In these three provinces some degree of price competition has developed between store sales and home delivery.

The powers given to milk control boards include: authority to inquire into all matters pertaining to the fluid milk industry, to define market areas, to arbitrate disputes, to examine the books and records of those engaged in the industry, to issue and revoke licences and to establish a price for milk; and authority to require a bond and periodic reports from distributors, payments to be made to producers by a certain date each month, distributors to give statements to suppliers or to give notice before ceasing to accept milk from any producer, and producers to give notice before ceasing to deliver milk to any distributor.

The Ontario Milk Marketing Board, a producer-controlled agency, was officially established by the Milk Commission of Ontario on November 1, 1965. Certain powers were assigned to it by the Commission regarding the production, marketing and transportation of milk.

The Canadian Dairy Commission, established in 1966, was a new development in the area of agricultural marketing because it was the first national marketing board to be established since creation of the Canadian Wheat Board in 1935. The Commission has the power to purchase

any dairy product and package, process, store, ship, insure, import, export or sell or otherwise dispose of any dairy product purchased by it. The Commission may also make payments to producers of milk and cream for the purpose of stabilizing the price of these products.

A comprehensive milk marketing plan was agreed to by the Canadian Dairy Commission and the milk marketing agencies of Ontario and Quebec in January 1971, establishing a market-sharing quota system for industrial milk and that portion of milk shipped by fluid producers which is used for manufacturing purposes. The agreement also covered cream shippers in Quebec, and cream shippers in Ontario entered the plan on April 1, 1971. Prince Edward Island was the third province to enter into the program, which became effective in that province on December 6, 1971. Producers in Alberta entered on April 1, 1972 and Manitoba and Saskatchewan came under the program on July 1, 1972. British Columbia entered the program on October 1, 1973, and Nova Scotia and New Brunswick on April 1, 1974. All manufacturing milk and cream sold in Canada now comes under the market-sharing program. With the market-sharing arrangement, each producer receives a market price related to Canadian price support levels for deliveries up to his market share. Prices for deliveries over market share are related to world prices for surplus dairy products.

Additional information on the role of the Commission with regard to dairy production and income stabilization is given in Section 11.2.2.

Producer marketing boards were introduced during the 1930s to give agricultural producers legal authority under certain conditions to control the marketing of their produce. The Natural Products Marketing Act of 1934 attempted to provide this power at the federal level but the courts ruled that the subject was outside federal jurisdiction. The subsequently introduced Natural Products Marketing (British Columbia) Act, 1936 was found to be within the powers of provincial governments and it has since been used as a model for marketing board legislation as it evolved in all 10 provinces.

While marketing board legislation has been revised from time to time on the basis of experience and there are variations in detail from province to province, the same basic powers are given to producers in all provinces. These include authority for a duly constituted producer board to control the marketing of 100% of a specified commodity produced in a designated area. A producer board, in at least some provinces, may set production quotas for each farmer. One producer board may control the marketing of several related commodities and the designated area may be either the whole or part of a province. A producer vote is usually required to establish a producer marketing board whose powers are delegated either by a provincial marketing board, which has certain supervisory authority, or by the Lieutenant Governor in Council.

The powers of a producer marketing board provided by provincial legislation are necessarily limited to trade within the province. Under the Agricultural Products Marketing Act (RSC 1970, c.A-7), the federal government may delegate to a marketing board powers with respect to interprovincial and export trade similar to those it holds under provincial authority with respect to intraprovincial trade. This Act also gives the Governor in Council the right to authorize a provincial marketing board to impose and collect levies from persons engaged in the production and marketing of commodities controlled by it for the purposes of the board including the creation of reserves and the equalization of returns.

The federal Farm Products Marketing Agencies Act was passed in January 1972 and is the enabling legislation for the creation of national marketing agencies or boards. National agencies may be set up, when producers and provincial authorities desire it, for any agricultural commodities which, due to widespread production in Canada or for other reasons, cannot be effectively marketed in an orderly manner under the jurisdiction of individual provincial boards. The Act establishes a National Farm Products Marketing Council to advise the Minister of Agriculture on all matters relating to the establishment and operation of national agencies, to review the performance of and assist in promoting effective marketing by these agencies and to consult with interested provinces on a continuing basis concerning the establishment of national marketing agencies.

The first national agency formed under the Act, the Canadian Egg Marketing Agency, commenced operations in June 1973. A second agency, the Canadian Turkey Marketing Agency, went into operation in March 1974. These federal agencies operate in conjunction with provincial egg and turkey boards; they do not deal directly with producers.

During 1973-74 there were 106 provincially authorized marketing boards operating in Canada, including the milk control boards mentioned earlier in this section, as well as the Canadian Wheat Board, a federal board. Boards are established in all provinces, led by Quebec with 26 and Ontario with 20. An estimated 54% of 1973 farm cash income was received from sales made under the jurisdiction of marketing boards. A variety of agricultural commodities were sold under marketing boards, including grains, pigs, milk, fruit, potatoes and other vegetables, tobacco, poultry, eggs, wood, soya beans, honey, maple products and pulpwood. At year-end 1974, the federal government had delegated authority to 73 provincial boards to control the marketing of their products in interprovincial and export trade.

Sources

- 11.1 Information Division, Canada Department of Agriculture.
- 11.2 Information Division, Canada Department of Agriculture; Agriculture Stabilization Board; Grains Group, Department of Industry, Trade and Commerce; Crop Insurance Division, Canada Department of Agriculture; Canadian Dairy Commission; Canadian Livestock Feed Board; Farm Credit Corporation; Guaranteed Loans Administration, Department of Finance; Grain Marketing Office, Department of Industry, Trade and Commerce.
- 11.3 Supplied by respective provincial government departments.
- 11.4 Agriculture Division, Industry Statistics Branch, Statistics Canada; except Tobacco: Food, Beverages and Textiles Section, Manufacturing and Primary Industries Division, Statistics Canada.
- 11.5 Census of Agriculture Division, Census Field, Statistics Canada.
- 11.6 - 11.7 Agriculture Division, Industry Statistics Branch, Statistics Canada.
- 11.8 Grains Group, Department of Industry, Trade and Commerce; Marketing and Trade Division, Canada Department of Agriculture.

Tables

..	not available	Equivalent values of metric units:
...	not appropriate or not applicable	1 hectare (ha) = 2.47 acres
—	nil or zero	1 metric ton (t) wheat = 36.744 bu
--	too small to be expressed	oats = 64.842 bu
e	estimate	barley = 45.930 bu
p	preliminary	certain tables may not add due to rounding
r	revised	

It should be noted that figures shown for the latest year are subject to revision, and that some figures for earlier years have been revised. Figures for Newfoundland are not included, as agricultural activity there is of minor importance and production small.

11.1 Cash receipts from farming operations (excluding supplementary payments), by province, 1970-74 (thousand dollars)

Province	1970	1971	1972	1973	1974
Prince Edward Island	44,613	38,868	44,782	72,002	84,004
Nova Scotia	67,644	65,618	73,919	94,692	104,139
New Brunswick	58,486	52,801	65,117	95,571	104,027
Quebec	667,414	690,125	772,024	962,358	1,108,967
Ontario	1,410,863	1,427,965	1,637,699	1,947,551	2,277,554
Manitoba	335,731	367,841	478,478	611,642	818,305
Saskatchewan	686,057	901,408	1,172,288	1,435,534	2,025,426
Alberta	705,280	776,886	896,023	1,193,241	1,602,176
British Columbia	216,585	223,048	246,038	316,648	402,009
Total	4,192,673	4,544,560	5,386,368	6,729,239	8,526,607

11.2 Cash receipts from farming operations, by commodity or other source, 1971-74 (thousand dollars)

Item	1971	1972	1973	1974
Wheat	645,981	828,431	867,654	1,463,281
Wheat, Canadian Wheat Board payments	75,202	118,426	331,182	483,272
Oats	31,619	26,321	30,723	47,612
Oats, Canadian Wheat Board payments	1,738	5,314	12,861	—
Barley	192,270	217,332	229,771	426,669
Barley, Canadian Wheat Board payments	16,606	2,966	100,800	96,069
Canadian Wheat Board cash advances	72,998	23,249	29,947	51,670
Canadian Wheat Board cash advance repayments	-157,563	-50,698	-23,476	-30,819
Deferred grain receipts	—	—	-305,246	-474,551
Liquidation of deferred grain receipts	—	—	—	305,246
Rye	10,013	12,082	19,852	25,236
Flaxseed	57,075	53,760	119,063	144,535
Rapeseed	134,449	151,220	252,278	349,294
Soya beans	27,898	35,784	50,348	75,914
Corn	59,186	60,183	101,847	151,822
Sugar beets	18,576	20,902	22,293	40,252
Potatoes	73,297	78,958	171,174	225,345
Fruits	92,847	99,177	117,567	142,723
Vegetables	129,873	141,949	159,853	157,650
Tobacco	135,347	150,083	142,821	209,636
Other crops	134,408	150,472	192,243	244,081
Total, cash receipts from crops	1,751,820	2,125,911	2,623,555	4,134,937
Cattle and calves	1,059,603	1,204,978	1,479,511	1,374,594
Pigs	428,718	590,424	831,846	787,812
Sheep and lambs	7,805	8,991	10,673	11,489
Dairy products	705,697	778,590	850,008	1,095,273
Poultry	262,578	295,853	437,939	472,360
Eggs	151,717	163,777	243,790	270,478
Other livestock and products	46,077	56,266	76,767	75,290
Total, cash receipts from livestock and products	2,662,195	3,098,879	3,930,534	4,087,296
Forest and maple products	28,970	37,062	43,995	42,874
Dairy supplementary payments	100,336	101,410	131,022	234,896
Deficiency payments	1,239	23,106	133	26,604
Total, cash receipts excl. supplementary payments	4,544,560	5,386,368	6,729,239	8,526,607
Supplementary payments	18,255	76,954	71,867	23,872
Total, cash receipts	4,562,815	5,463,322	6,801,106	8,550,479

11.3 Net income of farm operators from farming operations¹, by item and by province, 1971-74 (thousand dollars)

Item and province	1971	1972	1973	1974
ITEM				
1. Cash receipts from farming operations	4,544,560	5,386,368	6,729,239	8,526,607
2. Income in kind	537,645	559,141	677,053	749,947
3. Supplementary payments	18,255	76,954	71,867	23,872
4. Realized gross income (items 1 + 2 + 3)	5,100,460	6,022,463	7,478,159	9,300,426
5. Operating and depreciation charges	3,632,430	3,880,692	4,771,808	5,829,025
6. Realized net income (items 4-5)	1,468,030	2,141,771	2,706,351	3,471,401
7. Value of inventory changes	182,940	-295,326	637,592	-71,802
8. Total gross income (items 4 + 7)	5,283,400	5,727,137	8,115,751	9,228,624
Total, net income (8-5)	1,650,970	1,846,445	3,343,943	3,399,599
PROVINCE				
Prince Edward Island	5,064	12,479	29,686	44,948
Nova Scotia	15,562	22,589	31,446	24,963
New Brunswick	15,741	18,807	42,567	58,431
Quebec	200,070	262,053	355,646	343,871
Ontario	393,835	512,449	704,092	541,358
Manitoba	170,533	185,703	380,937	353,985
Saskatchewan	487,516	405,439	938,945	1,157,068
Alberta	276,423	336,662	725,519	712,045
British Columbia	86,226	90,264	135,105	162,930

¹Includes estimated value of farm homes, supplementary payments made under the provisions of the Prairie Farm Assistance Act and payments under the Western Grain Producers' Acreage Payment Regulations.

11.4 Acreages, yields and prices of principal field crops, 1970-74, with average for 1965-69

Crop and year	Area '000 acres	Yield per acre	Production '000 bu	Average price \$ per bu	Total value ¹ \$ '000
Wheat					
Av. 1965-69	28,501	23.8	678,172	1.54	1,047,145
1970	12,483	26.6	331,579	1.44	476,614
1971	19,407	27.3	529,552	1.35	717,345
1972	21,350	25.0	533,288	1.86	993,349
1973	24,361	24.8	604,738	4.47	2,703,446
1974	23,477	22.3	522,513	..	..
Oats					
Av. 1965-69	7,673	46.5	356,806	0.68	241,304
1970	6,882	51.3	353,073	0.60	211,438
1971	6,831	53.2	363,479	0.57	206,739
1972	6,104	49.2	300,208	0.89	266,733
1973	6,698	48.8	326,880	1.58	515,076
1974	6,106	41.7	254,745	..	..
Barley					
Av. 1965-69	7,983	36.7	292,947	0.87	253,861
1970	9,894	41.3	408,287	0.75	307,415
1971	13,980	43.0	601,628	0.69	412,660
1972	12,509	41.4	518,316	1.25	646,184
1973	11,958	39.3	469,570	2.50	1,171,970
1974	11,500	34.3	394,286	..	..
Rye					
Av. 1965-69	747	20.1	15,040	1.03	15,477
1970	832	22.7	18,905	0.89	16,879
1971	957	22.9	21,915	0.81	17,711
1972	634	21.3	13,524	1.44	19,521
1973	634	22.5	14,282	2.55	36,423
1974	843	22.4	18,914	..	..
Mixed grains					
Av. 1965-69	1,705	48.5	82,748	0.88	73,098
1970	1,959	50.7	99,271	0.84	83,286
1971	2,055	52.1	107,078	0.81	86,446
1972	2,065	50.5	104,285	0.99	103,257
1973	2,002	48.5	97,013	1.94	187,735
1974	1,811	44.6	80,754	..	..
Flaxseed					
Av. 1965-69	1,824	11.9	21,758	2.74	59,552
1970	3,313	14.5	47,966	2.21	105,963
1971	1,768	12.7	22,387	2.20	49,282
1972	1,321	13.3	17,617	4.02	70,863
1973	1,450	13.4	19,400	9.31	180,697
1974	1,500	9.5	14,300	..	..
Rapeseed					
Av. 1965-69	1,529	16.5	25,180	2.20	55,518
1970	4,050	17.8	72,200	2.33	168,179
1971	5,306	17.9	95,000	2.16	205,530
1972	3,270	17.5	57,300	3.16	181,086
1973	3,150	16.9	53,200	5.72	304,078
1974	3,260	16.2	52,900	..	..
Corn for grain					
Av. 1965-69	876	81.2	71,172	1.31	93,398
1970	1,234	84.0	103,684	1.37	142,297
1971	1,410	82.2	115,977	1.18	136,990

11.4 Acreages, yields and prices of principal field crops, 1970-74, with average for 1965-69 (concluded)

Crop and year	Area '000 acres	Yield per acre	Production	Average price	Total value ¹ \$'000
Corn for grain (concluded)					
1972	1,327	75.0	99,538	1.65	164,100
1973	1,310	84.2	110,365	2.66	293,751
1974	1,460	69.8	101,910	..	..
Potatoes		cwt	'000 cwt	\$ per cwt	
Av. 1965-69	305	156.2	47,700	1.97	93,988
1970	316	174.6	50,604	2.16	109,370
1971	268	181.8	45,317	1.84	83,318
1972	244	179.8	43,886	3.65	160,356
1973	261	182.6	47,586	5.50	261,609
1974	280	191.1	53,515	..	..
Tame hay		ton	'000 tons	\$ per ton	
Av. 1965-69	12,593	1.90	23,895	18.66	445,773
1970	12,978	2.08	26,958	19.02	512,731
1971	12,354	2.00	24,732	20.04	495,636
1972	12,859	1.86	23,929	23.08	552,356
1973	13,200	2.00	26,448	29.23	773,038
1974	13,389	1.94	26,019	..	..

¹Gross value of farm production; does not represent cash income from sales.

11.5 Acreages and production of field crops 1973 and 1974, and value 1972, by province

Field crop and province	Area ('000 acres)		Total production		Gross farm value (\$'000)
	1973	1974	1973	1974	1972
'000 bu					
WHEAT	24,361	23,477	604,738	522,513	993,349
Prince Edward Island	8	10	284	444	530
Nova Scotia	3	3	95	120	286
New Brunswick	4	4	96	144	253
Quebec	44	60	1,091	1,535	1,524
Ontario					
Winter	375	420	14,812	19,070	27,310
Spring	12	10	360	300	738
Manitoba	3,100	3,000	80,000	63,000	128,340
Saskatchewan	15,800	15,400	375,000	326,000	612,880
Alberta	4,900	4,500	130,000	110,000	217,120
British Columbia	115	70	3,000	1,900	4,368
OATS	6,698	6,106	326,880	254,745	266,733
Prince Edward Island	49	51	2,107	2,805	2,399
Nova Scotia	17	19	617	920	796
New Brunswick	47	51	1,748	2,295	1,775
Quebec	675	625	19,912	23,810	25,029
Ontario	540	495	25,596	23,415	27,134
Manitoba	1,300	1,200	63,000	43,000	49,500
Saskatchewan	2,000	1,900	99,000	75,000	70,310
Alberta	2,000	1,700	111,000	80,000	87,360
British Columbia	70	65	3,900	3,500	2,430
BARLEY	11,958	11,500	469,570	394,286	646,184
Prince Edward Island	18	20	518	1,048	1,606
Nova Scotia	7	6	187	271	465
New Brunswick	12	10	355	447	432
Quebec	51	53	1,255	1,650	1,869
Ontario	350	340	17,255	15,470	22,556
Manitoba	2,100	1,800	83,000	53,000	107,100
Saskatchewan	4,200	4,000	164,000	128,000	217,710
Alberta	5,050	5,100	197,000	188,000	289,800
British Columbia	170	170	6,000	6,400	4,646
FALL RYE	592	801	13,517	18,164	18,402
Quebec	2	2	41	44	55
Ontario	48	47	1,320	1,385	1,661
Manitoba	80	90	2,100	2,160	2,358
Saskatchewan	240	335	4,600	6,700	7,050
Alberta	220	325	5,400	7,800	7,238
British Columbia	2	2	56	75	40
SPRING RYE	42	42	765	750	1,119
Manitoba	2	2	45	40	39
Saskatchewan	20	15	320	230	495
Alberta	20	25	400	480	585
ALL RYE	634	843	14,282	18,914	19,521
Quebec	2	2	41	44	55
Ontario	48	47	1,320	1,385	1,661
Manitoba	82	92	2,145	2,200	2,397
Saskatchewan	260	350	4,920	6,930	7,545
Alberta	240	350	5,800	8,280	7,823
British Columbia	2	2	56	75	40

11.5 Acreages and production of field crops 1973 and 1974, and value 1972, by province (continued)

Field crop and province	Area ('000 acres)		Total production		Gross farm value (\$'000)
	1973	1974	1973	1974	1972
			'000 bu	'000 bu	
PEAS	66	78	1,591	1,680	3,889
Quebec	1	1	8	8	45
Ontario	2	2	28	22	78
Manitoba	35	40	840	830	1,900
Saskatchewan	4	6	92	140	250
Alberta	24	29	600	650	1,520
British Columbia	1	1	23	30	96
BEANS	133	161	2,885	3,429	17,736
Quebec	1	1	18	19	86
Ontario	132	160	2,867	3,410	17,650
SOYA BEANS	470	445	14,570	11,040	53,703
Ontario	470	445	14,570	11,040	53,703
BUCKWHEAT	89	64	1,379	1,216	2,372
New Brunswick	2	2	42	57	107
Quebec	11	10	187	195	224
Ontario	8	12	200	264	343
Manitoba	65	40	900	700	1,610
Saskatchewan	4	—	50	—	88
MIXED GRAINS	2,002	1,811	97,013	80,754	103,257
Prince Edward Island	81	77	3,402	4,358	4,010
Nova Scotia	7	8	221	369	422
New Brunswick	6	5	231	252	351
Quebec	120	125	3,384	4,675	5,960
Ontario	875	820	49,350	43,800	51,442
Manitoba	295	200	12,500	6,000	13,500
Saskatchewan	210	200	8,800	6,400	8,460
Alberta	400	370	18,800	14,600	18,700
British Columbia	8	6	325	300	412
FLAXSEED	1,450	1,500	19,400	14,300	70,863
Ontario	—	—	—	—	53
Manitoba	600	750	7,600	7,100	24,190
Saskatchewan	650	550	8,900	4,700	35,820
Alberta	200	200	2,900	2,500	10,800
RAPESEED	3,150	3,260	53,200	52,900	181,086
Manitoba	400	500	7,700	8,500	26,350
Saskatchewan	1,450	1,500	24,000	24,000	79,856
Alberta	1,300	1,200	21,500	19,500	74,880
British Columbia	—	60	—	900	—
SUNFLOWER SEED	129	30	90,900	26,000	11,555
Manitoba	125	30	87,500	26,000	10,640
Saskatchewan	2	—	2,000	—	750
Alberta	2	—	1,400	—	165
MUSTARD SEED	335	350	262,000	260,000	5,044
Manitoba	40	40	32,000	30,000	562
Saskatchewan	225	200	180,000	150,000	3,738
Alberta	70	110	50,000	80,000	744
SHELLED CORN	1,310	1,460	110,365	101,910	164,100
Quebec	119	165	8,435	11,520	14,359
Ontario	1,175	1,290	101,050	90,200	148,656
Manitoba	16	5	880	190	1,085
POTATOES	261	280	47,586	53,515	160,356
Prince Edward Island	42	46	9,553	10,304	33,212
Nova Scotia	4	4	557	638	1,910
New Brunswick	53	58	10,256	13,398	45,548
Quebec	50	53	7,275	8,425	17,017
Ontario	42	43	7,265	8,120	32,857
Manitoba	30	35	4,400	4,900	7,500
Saskatchewan	3	4	580	530	1,662
Alberta	23	23	4,500	4,000	11,275
British Columbia	14	14	3,200	3,200	9,375
FIELD ROOTS	10	10	112	141	4,056
Prince Edward Island	1	1	9	9	482
Nova Scotia	1	1	5	8	198
New Brunswick	1	1	4	8	120
Quebec	4	4	44	48	1,036
Ontario	5	4	50	68	2,220
TAME HAY	13,200	13,389	26,448	26,019	552,356
Prince Edward Island	129	128	258	225	4,019
Nova Scotia	152	151	284	317	6,099
New Brunswick	164	160	333	277	5,596
Quebec	2,675	2,675	5,377	4,980	122,431
Ontario	2,850	2,700	7,296	6,320	147,226
Manitoba	1,200	1,250	2,200	2,400	40,000
Saskatchewan	1,900	2,000	2,900	3,200	52,250
Alberta	3,550	3,700	6,400	6,700	132,060
British Columbia	580	625	1,400	1,600	42,675

11.5 Acreages and production of field crops 1973 and 1974, and value 1972, by province (concluded)

Field crop and province	Area ('000 acres)		Total production		Gross farm value (\$'000)
	1973	1974	1973	1974	1972
FODDER CORN	892	1,048	11,276	11,070	79,129
Quebec	152	162	1,991	2,045	16,338
Ontario	700	840	8,820	8,485	58,691
Manitoba	24	28	165	210	1,600
British Columbia	16	18	300	330	2,500
SUGAR BEETS	69	68	994	829	21,193
Quebec	6	6	106	82	1,227
Manitoba	25	27	308	221	7,301
Alberta	38	35	580	526	12,665

11.6 Acreages and production of grain in the Prairie provinces, 1970-74

Grain	1970	1971	1972	1973	1974
ACREAGES ('000 acres)					
Wheat	12,000	18,885	20,800	23,800	22,900
Oats	5,260	5,315	4,660	5,300	4,800
Barley	9,300	13,312	11,900	11,350	10,900
Rye	765	906	582	582	792
Flaxseed	3,300	1,762	1,320	1,450	1,500
Rapeseed	4,050	5,306	3,270	3,150	3,200
PRODUCTION ('000 bu)					
Wheat	312,500	510,000	513,000	585,000	499,000
Oats	277,000	288,000	238,000	273,000	198,000
Barley	382,000	570,000	492,000	444,000	369,000
Rye	17,038	20,520	11,940	12,865	17,410
Flaxseed	47,800	22,300	17,600	19,400	14,300
Rapeseed	72,200	95,000	57,300	53,200	52,000

11.7 Carryover of Canadian grain, 10-year average 1961-70 and crop years ended July 31, 1971-73 (thousand bushels)

Grain and year	Total in Canada and United States	Total in Canada	In commercial storage in Canada	On farms in Canada	Prairie provinces	
					On farms	In country elevators
Wheat						
Av. 1961-70	597,526	597,526	400,155	198,246	195,750	227,966
1971	734,154	734,154	339,334	394,820	392,000	212,181
1972	583,757	583,757	272,257	311,500	308,000	130,257
1973	365,401	365,401	250,401	115,000	110,000	140,751
Oats						
Av. 1961-70	125,493	125,493	33,093	92,400	73,200	20,608
1971	125,373	125,373	34,223	91,150	75,000	23,568
1972	118,257	118,257	22,257	96,000	78,000	13,857
1973	79,679	79,679	14,679	65,000	52,000	8,272
Barley						
Av. 1961-70	122,955	122,926	58,362	64,593	62,000	37,018
1971	144,269	144,269	82,619	61,650	55,000	53,138
1972	175,843	175,843	89,843	86,000	76,000	42,075
1973	193,024	193,024	105,024	88,000	82,000	64,972
Rye						
Av. 1961-70	7,716	7,496	5,027	2,469	2,438	2,068
1971	12,943	12,801	7,401	5,400	5,400	3,705
1972	15,796	15,796	10,296	5,500	5,500	7,216
1973	10,304	10,304	8,704	1,600	1,600	4,744
Flaxseed						
Av. 1961-70	6,946	6,946	5,752	1,194	1,190	2,017
1971	25,306	25,306	16,106	9,200	9,200	6,951
1972	16,032	16,032	10,032	6,000	6,000	5,342
1973	7,673	7,673	7,073	600	600	2,815
Rapeseed						
Av. 1961-70	3,322					
1971	11,029	11,029	10,829	200	200	4,392
1972	43,139	43,139	26,839	16,300	16,300	17,542
1973	20,678	20,678	20,278	400	400	8,759

11.8 Livestock slaughtered at federally inspected establishments, 1970-74

Year	Cattle	Calves	Sheep	Pigs
1970	2,700,833	499,162	181,332	8,280,481
1971	2,786,908	464,240	205,082	9,742,759
1972	2,878,591	402,370	214,769	9,357,143
1973	2,878,016	291,524	234,206	9,041,220
1974	2,975,833	392,811	185,077	9,269,491

11.9 Production and domestic disappearance of poultry meat¹, 1973 and 1974

Year and item	Net production '000 lb.	Total supply '000 lb.	Domestic disappearance '000 lb.	Per capita consumption lb.
1973				
Fowl and chickens	801,170	841,480	798,478	36.1
Turkeys	230,330	262,483	225,217	10.2
Geese	4,299	4,490	4,155	0.2
Ducks	7,142	8,514	8,287	0.4
Total	1,042,941	1,116,967	1,036,137	46.9
1974				
Fowl and chickens	780,739	829,039	768,571	34.2
Turkeys	241,942	285,699	236,709	10.5
Geese	3,705	4,040	3,845	0.2
Ducks	7,745	13,621	12,676	0.6
Total	1,034,131	1,132,399	1,021,801	45.5

¹Eviscerated weight.**11.10 Production and utilization of milk, by province, 1972-74 (thousand pounds)**

Province and year	Milk used in manufacture		Milk otherwise used			Total milk production
	On farms ¹	In factories	Fluid sales ²	Farm-home consumed	Fed on farms	
Prince Edward Island	1972 562	151,085	22,135	9,546	6,836	190,164
	1973 234	138,262	23,934	8,633	6,128	177,191
	1974 —	132,711	24,567	7,378	7,249	171,905
Nova Scotia	1972 1,591	112,959	215,940	9,283	8,001	347,774
	1973 1,100	99,448	216,512	8,547	7,014	332,621
	1974 —	92,023	222,368	7,763	7,307	329,461
New Brunswick	1972 2,434	91,275	137,827	8,501	6,856	246,893
	1973 1,849	79,406	138,284	7,541	6,558	233,638
	1974 —	71,430	140,531	7,224	6,808	225,993
Quebec	1972 5,429	4,971,116	1,352,872	101,440	182,370	6,613,227
	1973 4,095	4,615,217	1,387,515	93,598	193,614	6,294,039
	1974 —	4,627,655	1,433,505	86,762	195,554	6,343,476
Ontario	1972 4,821	3,821,967	2,208,652	93,872	249,900	6,379,212
	1973 3,603	3,404,808	2,240,428	88,580	271,597	6,009,016
	1974 —	3,358,972	2,261,135	83,553	269,295	5,972,955
Manitoba	1972 3,931	469,159	248,558	42,266	48,650	812,564
	1973 2,902	458,962	261,575	38,695	42,837	804,971
	1974 —	420,064	260,413	37,088	44,464	762,029
Saskatchewan	1972 16,918	346,027	196,254	85,035	47,250	691,484
	1973 12,636	310,846	195,290	77,934	53,827	650,533
	1974 —	252,005	194,846	64,273	49,828	560,952
Alberta	1972 15,818	824,403	409,044	80,843	87,840	1,417,948
	1973 11,887	798,001	420,426	73,890	92,620	1,396,824
	1974 —	694,221	434,920	64,889	89,426	1,283,456
British Columbia	1972 1,310	330,205	603,137	17,335	24,950	976,937
	1973 1,123	314,195	626,092	16,353	28,383	986,146
	1974 —	312,380	657,543	15,830	34,382	1,020,135
Total	1972 52,814	11,118,196	5,394,419	448,121	662,653	17,676,203
	1973 39,429	10,219,145	5,510,056	413,771	702,578	16,884,979
	1974 —	9,961,461	5,629,828	374,760	704,313	16,670,362

¹Used in farm butter only.²Represents milk and cream, in milk equivalent, sold off farms for fluid purposes.**11.11 Farm values of milk production, by province, 1972-74 (thousand dollars)**

Province and year	Value of milk used in manufacture		Value of milk otherwise used			Value of total milk production
	On farms ¹	In factories	Fluid sales ²	Farm-home consumed	Fed on farms ²	
Prince Edward Island	1972 16	4,954	1,423	323	743	7,385 ⁴
	1973 7	5,001	1,771	312	690	7,705 ⁴
	1974 —	5,973	2,341	233	787	9,210 ⁴
Nova Scotia	1972 43	3,787	16,073	299	350	20,552
	1973 30	3,630	18,549	305	343	22,857
	1974 —	4,475	23,667	304	328	28,687 ⁴
New Brunswick	1972 68	2,575	9,271	286	557	12,757
	1973 53	2,350	10,751	266	539	13,959
	1974 —	2,525	13,494	300	641	16,919 ⁴

11.11 Farm values of milk production, by province, 1972-74 (thousand dollars) (concluded)

Province and year		Value of milk used in manufacture		Value of milk otherwise used			Value of total milk production
		On farms ¹	In factories	Fluid sales ²	Farm-home consumed	Fed on farms ³	
Quebec	1972	160	208,765	86,707	4,281	9,577	304,885 ⁴
	1973	126	217,199	98,539	4,418	10,893	326,689 ⁴
	1974	—	278,267	131,798	5,206	12,803	421,511 ⁴
Ontario	1972	136	154,539	142,467	3,821	13,403	311,133 ⁴
	1973	108	153,796	165,797	4,022	15,452	336,671 ⁴
	1974	—	192,706	210,170	4,729	17,747	421,574 ⁴
Manitoba	1972	108	13,706	14,552	1,179	2,541	32,007 ⁴
	1973	82	14,616	17,116	1,277	3,259	36,119 ⁴
	1974	—	19,468	23,794	1,721	3,283	47,924 ⁴
Saskatchewan	1972	448	8,528	12,243	2,432	2,854	26,495 ⁴
	1973	340	8,203	13,141	2,533	3,591	27,758 ⁴
	1974	—	8,149	18,197	2,378	3,588	32,201 ⁴
Alberta	1972	419	25,918	23,268	2,943	5,682	58,065 ⁴
	1973	330	29,220	28,717	3,295	7,375	68,601 ⁴
	1974	—	32,266	39,830	3,361	7,202	82,175 ⁴
British Columbia	1972	35	12,152	45,750	702	1,109	59,748
	1973	31	13,124	55,598	760	1,404	70,875 ⁴
	1974	—	19,052	73,440	1,073	2,424	95,651 ⁴
Total	1972	1,433	434,924	351,754	16,266	36,816	833,027 ⁴
	1973	1,107	447,139	409,979	17,188	43,546	911,234 ⁴
	1974	—	562,881	536,731	19,305	48,803	1,155,852 ⁴

¹Used in farm butter only.²Represents the value of milk and cream sold off farms for fluid purposes.³Includes values of skim milk and buttermilk retained on farms.⁴Represents the market price less levies on manufacturing milk collected under provincial authority. Levies by category of milk are not available, therefore cash receipts do not add.

11.12 Production of butter and cheese, by province, 1972-74 (thousand pounds)

Province and year		Butter				Cheese Factory ¹
		Creamery	Farm	Whey	Total	
Prince Edward Island	1972	3,448	24	12	3,484	2,607
	1973	2,799	10	55	2,864	2,293
	1974	2,628	—	83	2,711	3,065
Nova Scotia	1972	2,061	68	—	2,129	1,872
	1973	1,660	47	—	1,707	1,808
	1974	1,029	—	—	1,029	2,235
New Brunswick	1972	2,801	104	—	2,905	492
	1973	2,475	79	—	2,554	554
	1974	2,102	—	—	2,102	411
Quebec	1972	138,259	232	3,128	141,619	112,571
	1973	120,821	175	2,209	123,205	119,816
	1974	110,425	—	2,909	113,334	142,040
Ontario	1972	87,204	206	4,356	91,766	113,521
	1973	73,677	154	4,764	78,595	103,033
	1974	74,118	—	5,112	79,230	100,475
Manitoba	1972	13,020	168	—	13,188	9,532
	1973	12,006	124	—	12,130	9,753
	1974	10,165	—	—	10,165	9,366
Saskatchewan	1972	14,079	723	—	14,802	—
	1973	11,859	540	—	12,399	463
	1974	9,070	—	—	9,070	1,059
Alberta	1972	25,439	676	7	26,122	4,418
	1973	23,282	508	—	23,790	6,236
	1974	18,695	—	—	18,695	7,038
British Columbia	1972	4,287	56	—	4,343	2,617
	1973	3,652	48	—	3,700	2,533
	1974	3,880	—	—	3,880	2,886
Total	1972	290,598	2,257	7,503	300,358	249,456
	1973	252,231	1,685	7,028	260,944	248,853
	1974	232,112	—	8,104	240,216	272,046

¹Factory-made cheese includes cheddar and other cheese made from whole milk and cream. Amounts for other cheese are included in Quebec, Ontario and Alberta figures, but, as fewer than three firms reported in the other provinces, data cannot be included except in the Canada total.

11.13 Domestic disappearance of dairy products, 1972-74

Product	1972		1973		1974	
	Total '000 lb.	Per capita ¹ lb.	Total '000 lb.	Per capita ¹ lb.	Total '000 lb.	Per capita ¹ lb.
Milk and cream	5,842,540	274.10	5,923,827	274.45	6,004,588	273.73
Milk	5,002,938	234.71	5,091,533	235.89	5,153,395	234.93
Cream as milk	839,602	39.39	832,294	38.56	851,193	38.80
Butter	326,512	14.94	301,810	13.64	298,696	13.29
Creamery	316,759	14.50	293,277	13.25	290,619	12.93
Farm	2,257	0.10	1,685	0.08	—	—
Whey	7,496	0.34	6,848	0.31	8,077	0.36
Cheese	288,012	13.18	319,214	14.43	342,545	15.24
Cheddar	91,836	4.20	108,935	4.92	117,952	5.25
Process	113,798	5.21	121,886	5.51	128,054	5.70
Other	82,378	3.77	88,393	4.00	96,539	4.29
Concentrated whole milk products ²	281,299	12.87	275,304	12.44	258,477	11.50
Evaporated	244,546	11.19	231,768	10.48	217,364	9.67
Condensed	17,093	0.78	20,186	0.91	18,923	0.84
Powdered	1,720	0.08	2,854	0.13	1,461	0.07
Concentrated milk by-products ³	216,733	9.92	222,907	10.07	237,450	10.56
Evaporated	22,748	1.04	20,251	0.92	20,018	0.89
Condensed	1,700	0.08	2,472	0.11	2,599	0.12
Powdered	103,373	4.73	114,584	5.18	126,114	5.61
All dairy products in terms of milk						
Butter	7,464,975	341.68	6,902,111	311.96	6,800,485	302.53
Cheese	2,834,422	129.73	3,154,575	142.58	3,386,784	150.66
Concentrated	639,145	29.25	625,536	28.27	577,959	25.71
Total ⁴	17,670,255	815.46	17,509,401	798.09	17,672,371	792.78

¹Includes Newfoundland for all manufactured dairy products.²Includes, in addition to the items listed, partly skimmed evaporated milk, whole milk powder of less than 26% fat, formula milks, evaporated milk of 2% fat, and concentrated liquid milk.³Includes, in addition to the items listed, powdered buttermilk, sugar of milk, casein, powdered whey, special formula skim milk products and concentrated liquid skim milk. Since the quantities used for human consumption and livestock feeding cannot be separated, per capita figures include both.⁴Includes ice cream mix in terms of milk.**11.14 Estimated commercial production and farm value of fruit, 1972-74**

Kind of fruit and year	Quantity	Weight tons	Farm value \$'000	Kind of fruit and year	Quantity	Weight tons	Farm value \$'000
Apples	'000 bu			Peaches	'000 bu		
1972	20,619	432,994	37,164	1972	1,693	42,322	9,843
1973	19,693	413,551	61,398	1973	1,963	49,088	11,699
1974	21,387	449,106	..	1974	2,285	57,114	..
Apricots				Pears			
1972	126	3,144	496	1972	1,738	43,445	5,860
1973	148	3,712	756	1973	1,387	34,657	4,859
1974	120	3,003	..	1974	1,747	43,663	..
Cherries (sour)				Plums and prunes			
1972	362	9,054	1,933	1972	362	9,053	1,797
1973	222	5,555	2,456	1973	415	10,391	2,256
1974	345	8,640	..	1974	268	6,705	..
Cherries (sweet)				Raspberries	'000 qt		
1972	319	7,996	3,808	1972	9,046	6,584	4,844
1973	460	11,501	4,864	1973	9,799	7,189	6,725
1974	290	7,251	..	1974	10,276	7,529	..
Strawberries	'000 qt			Grapes	'000 lb.		
1972	21,801	14,309	7,638	1972	124,398	62,199	10,978
1973	23,659	15,379	9,494	1973	132,016	66,009	12,898
1974	24,007	15,712	..	1974	162,397	81,198	..
Loganberries	'000 lb.			Blueberries			
1972	680	340	163	1972	26,221	13,111	7,002
1973	403	202	110	1973	36,013	18,006	10,367
1974	375	188	..	1974	19,784	9,892	..

11.15 Estimated commercial acreage and production of vegetables, 1971-73, with average for 1966-70

Vegetable	Average 1966-70		1971		1972		1973	
	Area acres	Production '000 lb.	Area acres	Production '000 lb.	Area acres	Production '000 lb.	Area acres	Production '000 lb.
Asparagus	3,250	5,266	3,140	5,694	3,590	5,900	3,690	5,900
Beans	25,520	102,935	22,330	100,016	21,940	75,936	25,220	99,968
Beets	2,250	40,149	2,330	44,424	2,100	33,778	2,230	38,387
Cabbage	7,580	152,379	8,090	170,979	8,280	150,198	9,270	177,610
Carrots	13,050	344,999	14,690	329,835	15,590	328,523	15,230	320,646
Cauliflower	3,320	36,340	3,240	36,178	3,430	31,811	3,540	34,521
Celery	1,130	41,574	1,080	46,641	1,060	42,537	1,190	51,539
Corn	59,670	452,549	66,160	513,240	62,790	498,219	68,890	497,889
Cucumbers	10,010	114,501	9,410	128,256	8,700	98,951	8,900	121,836
Lettuce	4,920	56,153	5,230	73,694	5,320	54,306	5,140	69,975
Onions	9,050	215,354	9,000	232,443	8,550	176,382	8,980	193,389
Parsnips	530	9,722	670	11,075	510	7,580	520	7,383
Peas	53,380	134,495	46,630	123,080	46,520	114,524	57,760	145,773
Rutabagas	8,640	203,992	6,840	164,880	6,570	161,328	7,070	169,356
Spinach	870	7,352	730	5,607	1,070	7,409	770	4,540
Tomatoes	29,890	735,494	27,780	830,747	26,900	726,246	27,600	859,896

11.16 Honey production, by province, and total value, 1971-74, with average for 1966-70

Province	Average 1966-70	1971	1972	1973	1974
Prince Edward Island	'000 lb. 37	33	56	63	24
Nova Scotia	" 208	235	342	347	285
New Brunswick	" 121	190	148	196	122
Quebec	" 2,955	2,540	1,590	4,836	3,073
Ontario	" 8,363	7,245	6,708	9,203	5,395
Manitoba	" 8,183	7,500	9,476	8,372	7,865
Saskatchewan	" 6,923	7,998	8,554	6,605	7,128
Alberta	" 16,262	22,540	20,150	21,605	18,486
British Columbia	" 2,529	3,735	3,575	3,402	3,239
Total production	'000 lb. 45,581	52,016	50,599	54,629	45,617
Total value	\$'000 7,800	10,821	15,623	25,185	..

11.17 Acreage, yield, production and value of sugar beets and quantity and value of beet sugar shipments, 1970-74

Year	Sugar beets			Average price per ton \$	Total farm value \$'000	Beet sugar (all types)	
	Harvested area acres	Yield per acre tons	Total produc- tion tons			Shipments '000 lb.	Value \$'000
1970	68,771	13.33	916,906	16.13	14,789	253,161	23,320
1971	81,096	14.99	1,215,917	18.27	22,215	244,371	24,902
1972	77,610	13.78	1,069,744	19.81	21,193	274,151	30,859
1973	68,640	14.48	994,162	39.15	38,917	..	..
1974	67,538	12.27	829,092	..	..	..	..

11.18 Production and value of maple sugar and maple syrup, by province, 1971-74, with average for 1966-70

Province and year	Maple sugar		Maple syrup			Total value, sugar and syrup \$
	Quantity lb.	Value \$	Quantity gal	Average price per gal \$	Value \$	
Nova Scotia						
Av. 1966-70	9,598	8,000	4,773	7.42	35,400	43,400
1971	16,200	16,000	4,548	7.92	36,000	52,000
1972	20,288	20,000	5,009	8.58	43,000	63,000
1973	9,579	11,000	3,266	9.80	32,000	43,000
1974	9,340	..	3,943	..	..	..
New Brunswick						
Av. 1966-70	26,677	25,000	8,784	6.81	59,800	84,800
1971	15,736	15,000	7,634	7.86	60,000	75,000
1972	24,516	25,000	13,121	8.92	117,000	142,000
1973	11,412	15,000	5,749	10.26	59,000	74,000
1974	18,559	..	5,840	..	..	..
Quebec						
Av. 1966-70	365,600	230,400	2,094,000	4.31	9,016,600	9,247,000
1971	241,000	183,000	1,164,000	5.60	6,518,000	6,701,000
1972	281,000	244,000	1,788,000	6.80	12,158,000	12,402,000
1973	275,000	283,000	2,287,000	6.92	15,826,000	16,109,000
1974	258,000	..	1,599,000	..	..	..
Ontario						
Av. 1966-70	13,782	14,200	227,355	6.29	1,430,800	1,445,000
1971	14,658	18,000	147,625	7.18	1,060,000	1,078,000
1972	14,049	19,000	180,291	7.70	1,388,000	1,407,000
1973	12,142	21,000	124,455	8.86	1,103,000	1,124,000
1974	16,080	..	142,041	..	..	..
Total						
Av. 1966-70	415,657	277,600	2,334,912	4.52	10,542,600	10,820,200
1971	287,594	232,000	1,323,807	5.80	7,674,000	7,906,000
1972	339,853	308,000	1,986,421	6.90	13,706,000	14,014,000
1973	308,133	330,000	2,420,470	7.03	17,020,000	17,350,000
1974	301,979	..	1,750,824	..	..	..

11.19 Production, and value of farm eggs, by province, 1973 and 1974

Province	1973				1974			
	Average number of layers '000	Average production per 100 layers No.	Net eggs laid ¹ '000 doz	Total value (sold and used) \$ '000	Average number of layers '000	Average production per 100 layers No.	Net eggs laid ¹ '000 doz	Total value (sold and used) \$ '000
Newfoundland	390	21,042	6,835	4,737	461	20,883	8,020	6,536
Prince Edward Island	141	20,508	2,410	1,453	141	20,161	2,363	1,604
Nova Scotia	998	21,926	18,228	10,770	1,110	21,286	19,680	13,497
New Brunswick	542	22,927	10,365	6,984	477	22,044	8,770	6,087
Quebec	3,476	20,561	59,518	34,629	3,656	21,170	64,613	42,134
Ontario	10,439	21,937	190,718	105,904	10,040	22,638	189,323	109,883
Manitoba	2,924	21,724	52,893	26,029	2,802	21,630	50,498	27,542
Saskatchewan	1,318	20,427	22,444	10,587	1,258	20,095	21,019	12,615
Alberta	2,460	20,218	41,437	22,056	2,362	20,728	40,769	26,719
British Columbia	3,076	22,186	56,872	32,158	3,014	21,874	54,942	37,672
Total	25,765	21,515	461,720	255,307	25,321	21,802	459,997	284,289

¹Total laid less loss.

11.20 Acreage, production and value of the commercial crop of leaf tobacco, by province, 1972-74

Year	Quebec			Ontario			Other provinces		
	Harvested area acres	Production '000 lb.	Value \$ '000	Harvested area acres	Production '000 lb.	Value \$ '000	Harvested area acres	Production '000 lb.	Value \$ '000
1972	9,592	9,191	6,288	88,566	170,805	132,118	5,125	6,840	4,487
1973	9,393	14,387	10,538	106,314	236,240	186,789	5,160	6,686	5,312
1974	8,889	11,006	9,432	110,186	240,924	216,786	3,771	4,857	4,376

11.21 Acreage, production and value of the commercial crop of leaf tobacco, by main type, 1972-74

Type of tobacco and year		Harvested area acres	Average yield per acre lb.	Total production '000 lb.	Average farm price per lb. ¢	Gross farm value \$'000
Flue-cured	1972	98,979	1,828	180,958	77.5	140,171
	1973	117,295	2,142	251,204	79.3	199,317
	1974	120,048	2,102	252,294	90.1	227,384
Burley	1972	1,412	2,225	3,142	51.1	1,605
	1973	1,220	2,187	2,668	56.9	1,520
	1974	937	2,143	2,007	73.6	1,477
Cigar leaf	1972	2,107	773	1,630	35.0	570
	1973	1,727	1,405	2,427	51.1	1,239
	1974	1,220	1,187	1,448	65.6	951
Total ¹	1972	103,283	1,809	186,836	76.5	142,893
	1973	120,867	2,129	257,313	78.8	202,639
	1974	122,847	2,090	256,787	89.8	230,594

¹Includes other types not specified.**11.22 Average index¹ numbers of farm prices of agricultural products, by province, 1970-74 (1961 = 100)**

Province	1970	1971	1972	1973	1974
Prince Edward Island	149.2	133.0	153.3	266.7	299.0
Nova Scotia	123.4	120.6	132.9	177.5	210.0
New Brunswick	135.5	123.3	140.5	228.1	262.3
Quebec	129.0	138.7	154.7	198.5	228.3
Ontario	128.4	129.4	143.4	187.8	206.4
Manitoba	103.0	102.1	119.7	189.3	226.8
Saskatchewan	97.3	96.4	112.0	189.5	234.2
Alberta	110.7	110.8	129.6	196.6	226.6
British Columbia	121.6	124.2	134.9	167.8	196.6
Total	116.0	117.2	132.9	191.5	222.2

¹A description of this index, its coverage and the methods used will be found in Statistics Canada *Quarterly bulletin of agricultural statistics* (Cat. No. 21-003) for July-September 1969.**11.23 Average cash prices a bushel of major Canadian grains, crop years ended July 31, 1970-74 (basis, in store Thunder Bay)**

Year	Averages in cents and eighths a bushel					
	Wheat No. 1 N.	1 C.W. Red Spring 14% ¹	Oats ¹ 2 C.W.	Barley ¹ 3 C.W. — Six-Row	Rye ² 2 C.W.	Flaxseed ² 1 C.W.
1970	180/7	...	73/2	112/2	108/3	292
1971	179/2	...	83/2	130/7	109/3	253/5
1972	...	168/4	67/2	113/7	98/6	257/2
1973	...	262/5	109/2	176/5	158/5	482/6
1974	...	549/3 ^a	174/4	307/4 ^a	294/7	1,014/2
						635/5

¹Canadian Wheat Board daily fixed prices.^aWinnipeg Commodity Exchange daily closing cash quotations.¹1 C.W. Red Spring 13.5%.²2 C.W. Six-Row.**11.24 Weighted average prices per 100 lb. of Canadian livestock at public stockyards, 1964-74 (dollars)**

Item	Average prices						
	1964-73	1969-73	1973	1974	1964-73	1969-73	1973
	Toronto				Calgary		
A1,2 steers	30.31	34.98	46.56	49.37	29.51	34.17	45.11
D1,2 cows	22.15	25.94	34.53	28.69	20.94	25.17	33.91
Feeder steers over 750 lb.	31.39	37.20	46.54	44.45	30.22	36.37	46.54
Choice and good veal calves	38.71	43.96	56.37	51.51	34.26	43.06	49.54
Index 100 hogs, dressed	34.59	37.15	54.66	50.29	30.39	32.74	48.69
Good lambs	30.85	34.94	42.87	48.64	23.93	26.92	33.24
	Winnipeg				Edmonton		
A1,2 steers	30.31	34.98	45.14	48.76	29.06	33.70	44.36
D1,2 cows	22.06	26.40	35.06	27.12	20.11	24.13	32.50
Feeder steers over 750 lb.	30.62	36.86	46.76	40.62	30.26	36.59	46.12
Choice and good veal calves	42.72	51.12	66.44	70.30	36.14	45.18	51.72
Index 100 hogs, dressed	32.11	34.56	51.31	46.12	30.44	32.97	49.92
Good lambs	26.37	30.61	36.29	44.94	23.69	26.83	33.03

11.25 Per capita supplies of food moving into consumption 1972 and 1973, with average for 1967-71

Kind of food and weight base		Pounds per capita per annum			Percentages of 1967-71 average	
		Average 1967-71	1972	1973	1972	1973
CEREALS	<i>retail wt</i>	149.8	152.8	151.4	101.9	101.1
Wheat flour	"	129.5	130.9	130.0	101.1	100.4
Rye flour	"	0.8	0.9	0.8	112.5	100.0
Oatmeal and rolled oats	"	3.9	3.8	2.7	97.4	69.2
Pot and pearl barley	"	0.1	0.1	0.1	100.0	100.0
Corn flour and meal	"	4.0	4.7	5.5	117.5	137.5
Buckwheat flour	"	--	--	--	--	--
Rice	"	5.0	6.2	6.2	124.0	124.0
Breakfast food	"	6.5	6.2	6.1	95.4	93.8
SUGARS AND SYRUPS	<i>sugar content</i>	109.6	109.9	115.0	100.3	104.9
Sugar	<i>retail wt</i>	102.3	99.6	105.4	97.4	103.0
Maple sugar	"	0.3	0.5	0.7	166.7	233.3
Honey	"	1.9	1.7	1.7	89.5	89.5
Other	"	8.9	10.8	9.6	121.3	107.9
PULSES AND NUTS	<i>retail wt</i>	9.2	18.9	15.9	205.4	172.8
Dry beans	"	2.5	4.2	1.0	168.0	40.0
Baked canned beans	"	--	5.9	5.6	--	--
Dry peas	"	1.1	1.6	1.3	145.5	118.2
Peanuts	"	4.2	5.3	6.0	126.2	142.9
Tree nuts	"	1.3	1.9	2.0	146.2	153.8
OILS AND FATS	<i>fat content</i>	41.1	43.3	43.5	105.4	105.8
Margarine	<i>retail wt</i>	8.6	9.7	9.8	112.8	114.0
Shortening and shortening oils	"	14.7	16.6	17.5	112.9	119.0
Salad oils	"	5.8	6.7	7.0	115.5	120.7
Butter	"	14.9	14.9	13.7	100.0	91.9
FRUIT	<i>fresh equiv.</i>	249.3	247.9	271.2	99.4	108.8
Fresh	<i>retail wt</i>	112.6	118.0	123.9	104.8	110.0
Canned	<i>net wt canned</i>	27.5	27.8	30.4	101.1	110.5
Frozen	<i>retail wt</i>	3.1	3.1	3.0	100.0	96.8
Juice	<i>net wt canned</i>	34.7	33.5	40.6	96.5	117.0
Tomatoes, fresh	<i>retail wt</i>	11.2	11.1	11.9	99.1	106.3
canned	<i>net wt canned</i>	5.4	6.1	7.1	113.0	131.5
Tomato juice	"	8.4	7.8	8.5	92.9	101.2
pulp, paste and purée	"	2.3	2.2	3.8	95.7	165.2
ketchup	"	4.0	4.4	4.4	110.0	110.0
Citrus fruit, fresh	<i>retail wt</i>	26.3	30.6	30.5	116.3	116.0
juice	<i>net wt canned</i>	14.6	15.1	17.9	103.4	122.6
Apples, fresh	<i>retail wt</i>	26.5	23.2	24.5	87.5	92.5
canned	<i>net wt canned</i>	1.2	0.2	0.2	16.7	16.7
juice	"	6.6	5.5	6.0	83.3	90.9
frozen	<i>retail wt</i>	0.3	0.4	0.4	133.3	133.3
sauce	<i>net wt canned</i>	1.2	1.3	1.4	108.3	116.7
pie filling	"	0.5	0.5	0.4	100.0	80.0
Apricots, fresh	<i>retail wt</i>	0.2	0.2	0.3	100.0	150.0
canned	<i>net wt canned</i>	0.5	0.5	0.5	100.0	100.0
Bananas, fresh	<i>retail wt</i>	17.5	20.9	21.4	119.4	122.3
Blueberries, fresh	"	--	0.6	0.6	--	--
canned	<i>net wt canned</i>	--	--	--	--	--
frozen	<i>retail wt</i>	--	--	--	--	--
Cherries, fresh	"	0.9	1.0	1.5	111.1	166.7
canned	<i>net wt canned</i>	0.3	0.2	0.2	66.7	66.7
frozen	<i>retail wt</i>	0.6	0.7	0.6	116.7	100.0
Cranberries, fresh	"	--	0.6	0.7	--	--
Melons, fresh	"	--	8.1	8.3	--	--
Peaches, fresh	"	5.0	4.8	5.3	96.0	106.0
canned	<i>net wt canned</i>	3.6	3.4	3.7	94.4	102.8
frozen	<i>retail wt</i>	--	--	--	--	--
Pears, fresh	"	2.9	3.9	4.2	134.5	144.8
canned	<i>net wt canned</i>	1.7	1.8	1.9	105.9	111.8
Pineapples, fresh	<i>retail wt</i>	0.3	0.4	0.5	133.3	166.7
canned	<i>net wt canned</i>	2.4	2.5	2.6	104.2	108.3
juice	"	1.1	0.9	1.1	81.8	100.0
Plums, fresh	<i>retail wt</i>	1.7	1.9	1.9	111.8	111.8
canned	<i>net wt canned</i>	0.4	0.3	0.3	75.0	75.0
Raspberries, fresh	<i>retail wt</i>	--	--	--	--	--
canned	<i>net wt canned</i>	0.1	0.1	0.1	100.0	100.0
frozen	<i>retail wt</i>	0.5	0.4	0.4	80.0	80.0
Strawberries, fresh	"	1.7	1.8	1.9	105.9	111.8
canned	<i>net wt canned</i>	0.1	0.1	0.1	100.0	100.0
frozen	<i>retail wt</i>	1.4	1.4	1.4	100.0	100.0
Grapes, fresh	"	10.0	8.9	10.5	89.0	105.0
Unspecified, fresh	"	8.8	--	--	--	--
canned	<i>net wt canned</i>	4.4	4.3	4.0	97.7	90.9
frozen	<i>retail wt</i>	0.2	0.2	0.2	100.0	100.0
juice	<i>net wt canned</i>	4.1	3.7	5.6	90.2	136.6
jams, jellies, marmalade	<i>processed wt</i>	5.3	4.7	4.5	88.7	84.9
VEGETABLES ¹	<i>fresh equiv.</i>	115.5	110.0	115.8	95.2	100.3
Fresh	<i>retail wt</i>	73.2	70.7	75.8	96.6	103.6
Canned	<i>net wt canned</i>	18.7	18.2	19.7	97.3	105.3
Frozen	<i>retail wt</i>	5.4	6.0	6.5	111.1	120.4
Cabbage, fresh	"	9.2	9.8	10.8	106.5	117.4
Lettuce	"	10.7	15.0	16.1	140.2	150.5
Spinach, fresh	"	0.5	0.7	0.6	140.0	120.0

11.25 Per capita supplies of food moving into consumption 1972 and 1973, with average for 1967-71 (concluded)

Kind of food and weight base		Pounds per capita per annum			Percentages of 1967-71 average	
		Average 1967-71	1972	1973	1972	1973
VEGETABLES (concluded)						
Carrots, fresh	"	15.7	12.6	10.8	80.3	68.8
canned	<i>net wt canned</i>	1.0	1.0	1.3	100.0	130.0
frozen	<i>retail wt</i>	0.5	0.7	0.8	140.0	160.0
Beans, fresh	"	0.8	1.2	1.3	150.0	162.5
canned	<i>net wt canned</i>	3.8	3.4	3.7	89.5	97.4
frozen	<i>retail wt</i>	0.8	0.8	0.7	100.0	87.5
Peas, fresh	"	0.4	0.4	0.8	100.0	200.0
canned	<i>net wt canned</i>	5.3	5.0	4.8	94.3	90.6
frozen	<i>retail wt</i>	2.4	2.4	2.5	100.0	104.2
Beets, fresh	"	0.9	0.3	0.3	33.3	33.3
canned	<i>net wt canned</i>	0.7	0.8	0.8	114.3	114.3
Cauliflower, fresh	<i>retail wt</i>	1.9	1.8	1.8	94.7	94.7
Celery, fresh	"	6.6	6.8	7.5	103.0	113.6
Corn, fresh	"	3.9	1.7	4.6	43.6	117.9
canned	<i>net wt canned</i>	4.9	4.9	5.4	100.0	110.2
frozen	<i>retail wt</i>	0.8	0.9	0.8	112.5	100.0
Cucumbers, fresh	"	2.5	1.8	2.2	72.0	88.0
Onions, not processed	"	12.7	11.1	11.1	87.4	87.4
Asparagus, fresh	"	0.3	0.2	0.3	66.7	100.0
canned	<i>net wt canned</i>	0.4	0.5	0.5	125.0	125.0
frozen	<i>retail wt</i>	--	--	--	...	...
Rutabagas, fresh	"	5.3	3.2	3.4	60.4	64.2
Broccoli, fresh	"	..	0.7	0.9	...	...
frozen	"	..	0.3	0.3	...	...
Brussels sprouts, fresh	"	..	..	--	...	...
frozen	"	..	0.2	0.2	...	...
Unspecified, fresh	"	1.8	0.6	0.6	33.3	33.3
canned	<i>net wt canned</i>	2.5	2.5	2.9	100.0	116.0
frozen	<i>retail wt</i>	1.1	0.6	0.9	54.5	81.8
MUSHROOMS						
Fresh	<i>fresh equiv.</i>	2.3	3.8	4.1	165.2	178.3
Canned	<i>retail wt</i>	0.7	1.0	1.2	142.9	171.4
canned	<i>net wt canned</i>	1.1	1.8	2.0	163.6	181.8
POTATOES						
Fresh	<i>fresh equiv.</i>	161.9	160.2	157.5	98.9	97.3
White	"	161.5	159.7	156.9	98.9	97.2
Sweet	"	0.4	0.5	0.5	125.0	125.0
MEAT						
Pork	<i>carcass wt</i>	158.5	165.7	159.9	104.5	100.9
Beef	"	56.5	61.0	57.6	108.0	101.9
Veal	"	86.1	92.5	91.8	107.4	106.6
Mutton and lamb	"	5.5	3.5	3.2	63.6	58.2
Offal	"	3.8	4.7	3.7	123.7	97.4
Canned meat ²	<i>net wt canned</i>	3.9	4.1	3.6	105.1	92.3
canned	"	5.8	1.1	0.9	...	...
EGGS						
Fresh	<i>fresh equiv.</i>	32.2	30.8	29.2	95.7	90.7
POULTRY ³						
Chicken	<i>eviscerated wt</i>	42.5	45.5	46.8	107.1	110.1
Fowl	"	28.1	31.4	32.8	111.7	116.7
Turkey	"	3.8	3.1	3.3	81.6	86.8
Duck	"	10.1	10.4	10.2	103.0	101.0
Goose	"	0.3	0.4	0.4	133.3	133.3
canned	"	0.2	0.2	0.2	100.0	100.0
FISH						
Fish and shellfish, fresh and frozen ⁴	<i>edible wt</i>	12.0	13.5	13.1	112.5	109.2
Fish, cured (smoked, salted, pickled)	"	7.6	7.3	9.0	96.1	118.4
Fish and shellfish, canned	"	0.9	1.0	0.7	111.1	77.8
canned	"	3.5	5.2	3.3	148.6	94.3
MILK AND CHEESE						
Cheddar cheese	<i>milk solids</i>	59.5	56.7	57.6	95.3	96.8
Process cheese	<i>retail wt</i>	3.7	4.2	4.9	113.5	132.4
Other cheese	"	4.4	5.2	5.5	118.2	125.0
Cottage cheese	"	3.0	3.8	4.0	126.7	133.3
Evaporated whole milk	"	1.9	2.3	2.4	121.1	126.3
Condensed whole milk	"	13.5	11.9	11.3	88.1	83.7
Powdered whole milk and cream	"	1.0	0.8	0.9	80.0	90.0
Miscellaneous milk products ⁵	"	0.2	0.1	0.1	50.0	50.0
Powdered skim milk ⁶	"	0.2	0.2	0.1	100.0	50.0
buttermilk	"	7.2	4.7	5.2	65.3	72.2
whhey	"	0.5	0.3	0.4	60.0	80.0
Miscellaneous by-products ⁷	"	2.1	2.7	2.3	128.6	109.5
Fluid whole milk ⁸	"	1.8	1.9	2.0	105.6	111.1
Milk in ice cream	"	290.2	267.4	268.0	92.1	92.4
canned	"	37.6	40.7	40.9	108.2	108.8
BEVERAGES						
Tea	<i>tea leaf equiv.</i>	2.3	2.4	2.5	104.3	108.7
Coffee	<i>green beans</i>	8.5	9.1	9.3	107.1	109.4
Cocoa	"	3.2	3.8	3.5	118.8	109.4

¹Includes pickles, relishes, vegetables used in soups, etc.²Per capita consumption not comparable with previous years.³Excludes Newfoundland.⁴Excludes herring, fresh and frozen, and all fish used for bait.⁵Includes formula milk, concentrated liquid milk and malted milk.⁶Part of this product is used for animal feeds.⁷Includes evaporated and condensed skim milk, condensed buttermilk, sugar of milk, formula skim milk products and concentrated liquid skim milk.⁸Includes cream expressed as milk.

11.26 Supply, distribution and disappearance of meats, 1971-74

Item		1971 ¹	1972	1973	1974
BEEF					
Animals slaughtered	'000	3,372.9	3,392.7	3,411.7	3,629.3
Estimated dressed weight	'000 lb.	1,877,575	1,898,328	1,910,575	1,999,106
On hand, Jan. 1	"	43,473	35,366	41,776	52,296
Imports for consumption	"	153,158	213,661	218,957	179,486
Total supply	"	2,074,206	2,147,355	2,171,308	2,230,888
Exports	"	113,635	83,829	88,241	57,461
Used for canning	"				
On hand, Dec. 31	"	35,366	41,776	52,702	44,148
Domestic disappearance	"	1,925,205	2,021,750	2,030,365	2,129,279
Per capita disappearance	lb.	89.2	92.5	91.8	94.7
VEAL					
Animals slaughtered	'000	838.2	644.6	482.2	615.8
Estimated dressed weight	'000 lb.	98,516	80,525	65,857	77,415
On hand, Jan. 1	"	5,316	3,367	8,230	4,433
Imports for consumption	"				
Total supply	"	103,832	83,892	74,087	81,848
Exports	"				
Used for canning	"				
On hand, Dec. 31	"	3,367	8,230	4,411	3,598
Domestic disappearance	"	100,465	75,662	69,676	78,250
Per capita disappearance	lb.	4.7	3.5	3.1	3.5
MUTTON AND LAMB					
Animals slaughtered	'000	422.8	446.3	501.1	424.3
Estimated dressed weight	'000 lb.	18,189	19,850	21,893	18,336
On hand, Jan. 1	"	11,260	11,068	9,103	7,233
Imports for consumption	"	52,765	80,548	58,410	38,397
Total supply	"	82,214	111,466	89,406	63,966
Exports	"	93	676	156	126
Used for canning	"				
On hand, Dec. 31	"	11,068	9,103	7,067	6,787
Domestic disappearance	"	71,053	101,687	82,183	57,053
Per capita disappearance	lb.	3.3	4.7	3.7	2.5
PORK					
Animals slaughtered	'000	11,904.0	10,654.7	10,398.8	10,289.3
Estimated dressed weight ²	'000 lb.	1,557,254	1,392,607	1,360,418	1,347,230
On hand, Jan. 1	"	26,878	28,969	18,803	33,114
Imports for consumption	"	16,954	44,983	54,131	80,190
Total supply	"	1,601,086	1,466,559	1,433,352	1,460,534
Exports	"	97,166	115,517	125,614	92,174
Used for canning	"				
On hand, Dec. 31	"	28,969	18,803	33,051	23,338
Domestic disappearance	"	1,474,951	1,332,239	1,274,687	1,345,022
Per capita disappearance	lb.	68.3	61.0	57.6	59.9
OFFAL					
Estimated production	'000 lb.	133,398	127,023	125,461	129,683
On hand, Jan. 1	"	8,061	9,036	7,390	10,223
Imports for consumption	"	8,934	10,948	8,934	8,899
Total supply	"	150,393	147,007	141,785	148,805
Exports	"	45,460	50,876	51,820	56,224
Used for canning	"				
On hand, Dec. 31	"	9,036	7,390	9,983	9,286
Domestic disappearance	"	95,897	88,741	79,982	83,295
Per capita disappearance	lb.	4.4	4.1	3.6	3.7

¹Intercensal revisions.²Included with beef.³Trimmed of larding fat.

11.27 Number of census-farms, by province, censuses 1966 and 1971

Province or territory	1966	1971
Newfoundland	1,709	1,042
Prince Edward Island	6,357	4,543
Nova Scotia	9,621	6,008
New Brunswick	8,706	5,485
Quebec	80,294	61,257
Ontario	109,887	94,722
Manitoba	39,747	34,981
Saskatchewan	85,686	76,970
Alberta	69,411	62,702
British Columbia	19,085	18,400
Yukon Territory and Northwest Territories	19	18
Canada	430,522	366,128

11.28 Use of agricultural land, by province, censuses 1966 and 1971 (acres)

Land use	Province or territory					
	Newfoundland		Prince Edward Island		Nova Scotia	
	1966	1971	1966	1971	1966	1971
Improved land	20,566	19,148	569,799	494,131	485,859	386,021
Under crops ¹	12,409	8,736	398,373	351,384	314,143	242,959
Pasture (improved)	5,320	7,881	152,191	114,271	132,355	107,390
Summerfallow	258	499	2,896	9,186	2,587	6,272
Other	2,579	2,032	16,339	19,290	36,774	29,400
Unimproved land	28,947	43,556	357,179	280,499	1,366,036	942,854
Woodland	13,750	11,338	279,681	210,911	1,084,273	740,338
Other	15,197	32,218	77,498	69,588	281,763	202,516
Total	49,513	62,704	926,978	774,630	1,851,895	1,328,875
	New Brunswick		Quebec		Ontario	
	1966	1971	1966	1971	1966	1971
Improved land	638,649	487,380	7,629,346	6,449,992	12,004,305	10,864,601
Under crops ¹	427,832	322,310	5,166,421	4,337,236	8,358,741	7,855,890
Pasture (improved)	166,835	114,836	2,121,141	1,712,106	2,935,693	2,336,446
Summerfallow	5,822	8,594	48,779	81,672	229,852	237,916
Other	38,160	41,640	293,005	318,978	480,019	434,349
Unimproved land	1,173,046	851,753	5,256,723	4,351,124	5,821,740	5,098,455
Woodland	973,888	682,237	3,777,489	3,098,920	2,834,417	2,300,621
Other	199,158	169,516	1,479,234	1,252,204	2,987,323	2,797,834
Total	1,811,695	1,339,133	12,886,069	10,801,116	17,826,045	15,963,056
	Manitoba		Saskatchewan		Alberta	
	1966	1971	1966	1971	1966	1971
Improved land	12,446,065	12,803,988	45,468,776	46,426,487	27,276,251	28,460,328
Under crops ¹	8,693,682	9,122,474	27,018,238	27,339,147	17,707,659	18,092,544
Pasture (improved)	770,519	730,499	1,909,653	1,958,192	2,310,945	2,744,940
Summerfallow	2,668,830	2,655,197	15,895,825	16,559,825	6,659,125	7,008,714
Other	313,034	295,818	645,060	569,323	598,522	614,130
Unimproved land	6,637,752	6,204,271	19,940,587	18,630,388	21,706,624	21,045,959
Woodland	1,212,959	960,183	1,347,741	999,180	1,859,257	1,666,085
Other	5,424,793	5,244,088	18,592,846	17,631,208	19,847,367	19,379,874
Total	19,083,817	19,008,259	65,409,363	65,056,875	48,982,875	49,506,287
	British Columbia		Yukon Territory and Northwest Territories		Canada	
	1966	1971	1966	1971	1966	1971
Improved land	1,614,141	1,755,247	620	1,554	108,154,377	108,148,877
Under crops ¹	955,287	1,092,593	219	405	69,053,004	68,765,678
Pasture (improved)	436,920	397,864	168	1,039	10,941,740	10,225,464
Summerfallow	117,684	172,816	25	36	25,631,683	26,740,727
Other	104,250	91,974	208	74	2,527,950	2,417,008
Unimproved land	3,678,169	4,067,984	3,648	2,894	65,970,451	61,519,737
Woodland	799,935	844,255	534	101	14,183,924	11,514,171
Other	2,878,234	3,223,727	3,114	2,793	51,786,527	50,005,566
Total	5,292,310	5,823,231	4,268	4,448	174,124,828	169,668,614

¹Includes field, vegetable, fruit and nursery crop land.

11.29 Economic classification of census-farms, by province, censuses 1966 and 1971 (number)

Economic class	Province or territory					
	Newfoundland		Prince Edward Island		Nova Scotia	
	1966	1971	1966	1971	1966	1971
Value of products sold of						
\$50,000 or over	33	24	97	115	159	213
35,000-\$49,999	19	11	74	88	91	122
25,000- 34,999	38	33	225	133	262	161
15,000- 24,999	31	38	385	288	399	383
10,000- 14,999	30	20	407	385	322	321
7,500- 9,999	47	37	744	347	525	242
5,000- 7,499	38	28	600	562	445	379
3,750- 4,999	65	53	796	359	664	297
2,500- 3,749	131	95	1,127	503	946	450
1,200- 2,499	541	301	1,274	674	1,410	946
250- 1,199	731	339	619	721	3,149	1,619
50- 249	5	25	9	360	2,167	855
Institutional farms, etc.				8	28	20
Total	1,709	1,042	6,357	4,543	9,621	6,008
	New Brunswick		Quebec		Ontario	
	1966	1971	1966	1971	1966	1971
Value of products sold of						
\$50,000 or over	167	138	799	902	4,385	4,603
35,000-\$49,999		132		837		4,041
25,000- 34,999	118	180	643	1,625	3,733	5,698

11.29 Economic classification of census-farms, by province, censuses 1966 and 1971 (number) (concluded)

Economic class	Province or territory					
	New Brunswick		Quebec		Ontario	
	1966	1971	1966	1971	1966	1971
15,000- 24,999	315	344	2,345	5,094	9,692	11,532
10,000- 14,999	334	366	4,156	6,898	11,522	9,950
7,500- 9,999	346	258	4,761	5,681	9,210	7,111
5,000- 7,499	532	399	9,644	8,576	13,173	9,416
3,750- 4,999	424	293	8,105	5,175	8,489	5,898
2,500- 3,749	702	493	11,508	6,144	10,520	7,418
1,200- 2,499	1,464	865	15,651	7,172	14,377	9,894
250- 1,199	2,588	1,251	14,120	7,597	14,410	10,874
50- 249	1,699	748	8,414	5,453	10,294	8,203
Institutional farms, etc.	17	18	148	103	82	84
Total	8,706	5,485	80,294	61,257	109,887	94,722
	Manitoba		Saskatchewan		Alberta	
	1966	1971	1966	1971	1966	1971
Value of products sold of \$50,000 or over	630	606	1,093	737	2,195	2,236
35,000-\$49,999	585	531	1,789	895	1,876	1,797
25,000- 34,999	2,556	926	8,571	1,919	5,909	2,657
15,000- 24,999	4,452	3,138	13,610	7,556	7,292	6,007
10,000- 14,999	4,238	4,263	11,496	11,496	8,012	8,007
7,500- 9,999	3,933	3,751	15,570	10,061	6,987	6,167
5,000- 7,499	6,409	5,233	15,570	13,779	10,130	8,079
3,750- 4,999	3,933	3,285	8,614	7,965	6,328	4,821
2,500- 3,749	4,569	3,603	9,219	8,522	7,534	5,477
1,200- 2,499	5,760	4,212	9,149	8,122	9,362	6,494
250- 1,199	4,235	3,341	4,278	4,009	6,599	5,674
50- 249	2,341	2,055	2,042	1,642	4,318	3,823
Institutional farms, etc.	39	37	255	267	161	178
Total	39,747	34,981	85,686	76,970	69,411	62,702
	British Columbia		Yukon Territory and Northwest Territories		Canada	
	1966	1971	1966	1971	1966	1971
Value of products sold of \$50,000 or over	724	869	—	—	10,282	10,443
35,000-\$49,999	456	572	—	—	9,384	9,026
25,000- 34,999	1,236	728	—	—	31,149	14,060
15,000- 24,999	1,314	1,204	—	—	44,217	36,869
10,000- 14,999	956	1,070	2	—	38,753	42,794
7,500- 9,999	1,329	814	—	—	58,103	34,452
5,000- 7,499	947	1,201	—	—	47,661	47,661
3,750- 4,999	1,445	824	—	1	37,923	28,946
2,500- 3,749	2,513	1,343	2	2	47,024	34,008
1,200- 2,499	4,071	2,353	3	6	60,947	40,833
250- 1,199	4,066	4,407	6	5	55,271	39,799
50- 249	28	2,979	1	4	36,692	26,461
Institutional farms, etc.	28	36	5	—	777	776
Total	19,085	18,400	19	18	430,522	366,128

11.30 Census-farms with sales of \$2,500 or more, classified by type of farm and by province, Census 1971 (number)

Type of farm	Province or territory					
	Nfld.	PEI	NS	NB	Que.	Ont.
Dairy	70	629	1,019	821	28,646	17,718
Cattle, hogs, sheep (excl. dairy farms)	40	980	655	535	5,183	28,129
Poultry	54	21	169	111	1,561	1,912
Wheat	—	—	—	—	20	313
Small grains (excl. wheat farms)	—	11	9	4	342	5,189
Field crops, other than small grains	30	616	76	670	1,124	4,593
Fruits and vegetables	58	26	250	98	1,472	3,856
Forestry	5	6	114	119	331	165
Miscellaneous specialty	5	8	109	26	423	1,606
Mixed	20	483	167	219	1,830	2,186
Livestock combination	3	400	77	132	1,169	902
Field crops combination	—	16	8	15	137	567
Other combination	17	67	82	72	524	717
Total	282	2,780	2,568	2,603	40,932	65,667
	Man.	Sask.	Alta.	BC	YT and NWT	Canada
Dairy	1,614	701	2,490	1,633	—	55,341
Cattle, hogs, sheep (excl. dairy farms)	9,829	15,913	25,843	2,501	2	89,610
Poultry	519	210	413	644	1	5,615
Wheat	2,738	26,516	3,893	166	—	33,646
Small grains (excl. wheat farms)	7,249	13,900	9,105	390	—	36,199
Field crops, other than small grains	376	112	814	387	—	8,798
Fruits and vegetables	65	14	40	1,948	—	7,827
Forestry	16	3	28	162	—	949
Miscellaneous specialty	209	128	320	571	—	3,405
Mixed	2,721	5,433	3,587	223	—	16,869
Livestock combination	1,418	2,269	1,612	37	—	8,019
Field crops combination	767	1,808	1,301	86	—	4,705
Other combination	536	1,356	674	100	—	4,145
Total	25,336	62,930	46,533	8,625	3	258,259

11.31 Size of census-farms, by province, Census 1971 (number)

Size of farm	Province or territory					
	Nfld.	PEI	NS	NB	Que.	Ont.
Under 3 acres	197	33	155	79	483	1,529
3- 9 acres	321	58	234	99	893	3,619
10- 69 "	358	660	976	552	7,414	16,763
70- 239 "	129	2,935	2,732	2,737	38,834	52,778
240- 399 "	20	611	1,025	1,134	9,903	13,315
400- 559 "	5	145	473	513	2,793	4,233
560- 759 "	4	62	222	188	647	1,461
760-1,119 "	2	19	127	124	226	715
1,120-1,599 "	1	12	34	34	41	224
1,600 acres and over	5	8	30	25	23	85
Total	1,042	4,543	6,008	5,485	61,257	94,722
	Man.	Sask.	Alta.	BC	YT and NWT	Canada
Under 3 acres	146	131	204	1,030	1	3,988
3- 9 acres	532	301	700	3,470	1	10,228
10- 69 "	1,713	886	2,521	6,765	3	38,611
70- 239 "	6,391	7,213	10,609	3,186	7	127,551
240- 399 "	7,739	12,411	12,606	1,100	3	59,867
400- 559 "	6,066	11,780	9,128	685	—	35,821
560- 759 "	4,979	12,638	8,196	573	—	28,970
760-1,119 "	4,381	15,316	8,478	607	3	29,998
1,120-1,599 "	1,910	9,261	4,846	390	—	16,753
1,600 acres and over	1,124	7,033	5,414	594	—	14,341
Total	34,981	76,970	62,702	18,400	18	366,128

11.32 Age of census-farm operators, by province, censuses 1966 and 1971 (number)

Age	Province or territory					
	Newfoundland		Prince Edward Island		Nova Scotia	
	1966	1971	1966	1971	1966	1971
Age of operator						
Under 25 years	19	14	132	96	82	60
25-34 "	153	81	789	549	742	542
35-44 "	326	202	1,266	931	1,640	1,072
45-54 "	569	362	1,668	1,186	2,690	1,704
55-59 "	243	151	803	650	1,280	917
60-64 "	166	115	600	490	1,131	710
65-69 "	120	62	510	309	879	486
70 years or over	113	55	589	332	1,177	517
Total	1,709	1,042	6,357	4,543	9,621	6,008
	New Brunswick		Quebec		Ontario	
	1966	1971	1966	1971	1966	1971
Age of operator						
Under 25 years	94	75	1,506	1,144	1,865	1,688
25-34 "	719	474	11,210	8,251	13,037	11,802
35-44 "	1,643	995	20,350	14,487	25,442	21,757
45-54 "	2,596	1,709	23,282	19,038	29,199	26,705
55-59 "	1,174	837	9,571	7,920	13,380	11,520
60-64 "	992	641	6,930	5,443	11,459	9,013
65-69 "	642	389	4,137	2,828	7,884	6,369
70 years or over	846	365	3,308	2,146	7,621	5,868
Total	8,706	5,485	80,294	61,257	109,887	94,722
	Manitoba		Saskatchewan		Alberta	
	1966	1971	1966	1971	1966	1971
Age of operator						
Under 25 years	931	1,037	2,634	2,735	1,916	1,591
25-34 "	5,171	4,533	11,888	9,695	10,460	8,915
35-44 "	9,436	7,577	20,599	16,611	17,244	15,088
45-54 "	11,483	10,196	24,067	22,317	18,516	17,930
55-59 "	4,899	4,718	10,025	9,991	7,949	7,225
60-64 "	3,739	3,468	7,515	7,507	6,555	5,684
65-69 "	2,236	1,983	4,540	4,432	3,857	3,638
70 years or over	1,852	1,469	4,418	3,682	2,914	2,631
Total	39,747	34,981	85,685	76,970	69,411	62,702
	British Columbia		Yukon Territory and Northwest Territories		Canada	
	1966	1971	1966	1971	1966	1971
Age of operator						
Under 25 years	230	209	—	—	9,409	8,649
25-34 "	2,028	2,041	4	3	56,201	46,886
35-44 "	4,603	4,705	5	6	102,554	83,431
45-54 "	5,310	5,317	6	4	119,386	106,468
55-59 "	2,326	2,225	—	3	51,650	46,157
60-64 "	2,026	1,716	2	1	41,115	34,788
65-69 "	1,243	1,176	—	—	26,048	21,673
70 years or over	1,319	1,011	2	1	24,159	18,076
Total	19,085	18,400	19	18	430,522	366,128

11.33 Selected farm machinery, by province, censuses 1966 and 1971 (number)

Type of machine		Province or territory					
		Nfld.	PEI	NS	NB	Que.	Ont.
Automobiles	1966	426	5,026	5,700	5,869	56,464	104,539
	1971	347	4,112	4,408	4,359	48,993	97,841
Motor trucks	1966	764	3,306	5,393	4,404	24,499	67,622
	1971	572	3,055	4,540	3,969	21,129	67,937
Tractors	1966	519	6,341	7,252	7,989	81,674	162,303
	1971	430	5,865	6,535	6,786	80,878	165,752
Grain combines	1966	—	1,020	252	965	6,108	25,372
	1971	—	1,237	319	887	5,804	25,320
Swathers	1966	—	59	51	69	2,953	4,578
	1971	6	104	81	137	3,866	7,845
Pick-up hay balers	1966	53	1,806	2,128	2,300	24,574	38,201
	1971	69	1,964	2,317	2,394	31,974	39,348
Forage crop harvesters	1966	9	90	175	166	3,705	11,567
	1971	10	146	290	209	5,021	13,136
		Man.	Sask.	Alta.	BC	YT and NWT	Canada
Automobiles	1966	35,800	72,571	53,171	16,381	10	355,957
	1971	32,063	62,929	51,564	17,773	8	324,397
Motor trucks	1966	36,689	102,470	85,559	14,116	14	344,836
	1971	41,306	116,600	93,471	17,243	27	369,849
Tractors	1966	65,552	134,908	112,245	19,676	24	598,483
	1971	64,587	132,632	111,256	21,953	24	596,698
Grain combines	1966	24,815	67,144	42,838	1,667	1	170,182
	1971	23,325	61,811	42,373	1,673	2	162,751
Swathers	1966	23,530	56,321	35,706	949	—	124,216
	1971	23,833	61,282	40,749	1,925	1	139,829
Pick-up hay balers	1966	12,712	26,155	25,161	3,858	6	136,954
	1971	13,472	28,574	28,187	4,527	6	152,832
Forage crop harvesters	1966	1,591	2,203	3,237	1,573	1	24,317
	1971	1,342	2,630	3,869	1,879	2	28,534

11.34 Estimated area and production of wheat harvested¹ in 1973 and 1974 in specified countries, with average for 1968-72

Continent and country	Harvested area of wheat ('000 ha)			Production of wheat ('000 t)		
	Average 1968-72	1973	1974P	Average 1968-72	1973	1974P
NORTH AMERICA	28,930	32,417	36,823	57,626	64,905	65,265
Canada	8,711	9,856	9,501	14,781	16,459	14,221
Guatemala	32	40	40	35	38	37
Honduras	1	1	1	1	1	1
Mexico	726	720	790	1,912	2,000	2,200
United States	19,461	21,800	26,491	40,897	46,407	48,806
SOUTH AMERICA	7,832	6,874	7,937	9,258	9,849	9,826
Argentina	4,802	3,850	3,902	6,052	6,560	5,100
Bolivia	73	69	69	56	57	57
Brazil	1,607	1,820	2,500	1,379	1,928	2,750
Chile	691	582	703	1,107	734	1,097
Colombia	62	45	59	69	59	81
Ecuador	71	45	56	63	44	50
Paraguay	37	25	40	35	20	30
Peru	141	145	147	129	149	160
Uruguay	347	292	460	366	297	500
Venezuela	1	1	1	1	1	1
EUROPE	27,900	26,498	27,824	74,594	82,252	89,814
EEC						
Belgium	202	201	203	845	1,005	951
Denmark	113	123	107	516	542	583
France	3,961	3,957	4,117	15,194	17,792	18,905
Germany, Federal Republic of	1,524	1,603	1,622	6,172	7,134	7,724
Ireland	85	58	55	338	229	218
Italy	4,070	3,590	3,744	9,669	8,921	9,590
Luxembourg	13	11	11	41	36	35
Netherlands	150	138	130	675	725	715
United Kingdom	1,009	1,146	1,248	4,129	5,003	5,750
Total, EEC	11,127	10,827	11,237	37,579	41,387	44,471
Austria	283	266	269	928	939	1,102
Finland	194	188	217	462	462	594
Greece	964	865	935	1,818	1,738	2,274
Malta and Gozo	1	1	1	2	2	2
Norway	4	5	14	12	20	62
Portugal	580	474	505	629	584	577
Spain	3,734	3,151	3,282	4,803	3,915	4,484
Sweden	258	290	346	1,020	1,335	1,864
Switzerland	97	90	84	376	339	369
Total, Western Europe	17,243	16,157	16,890	47,630	50,721	55,799

11.34 Estimated area and production of wheat harvested¹ in 1973 and 1974 in specified countries, with average for 1968-72 (concluded)

Continent and country	Harvested area of wheat ('000 ha)			Production of wheat ('000 t)		
	Average 1968-72	1973	1974 ^P	Average 1968-72	1973	1974 ^P
EUROPE (concluded)						
Albania	135	135	135	196	200	180
Bulgaria	1,017	975	975	2,961	3,300	2,800
Czechoslovakia	1,086	1,235	1,240	3,496	4,655	5,126
German Democratic Republic	610	696	750	2,346	2,861	3,300
Hungary	1,303	1,294	1,324	3,534	4,498	4,965
Poland	1,980	1,962	2,022	4,898	5,807	6,410
Romania	2,584	2,348	2,646	4,839	5,474	4,950
Yugoslavia	1,943	1,696	1,842	4,695	4,736	6,284
Total, Eastern Europe	10,658	10,341	10,934	26,964	31,531	34,015
USSR (Europe and Asia)	64,283	63,012	59,684	91,559	109,784	83,849
AFRICA	9,047	9,348	9,142	8,516	8,606	8,682
Algeria	2,267	2,150	2,150	1,514	1,100	850
Angola	15	13	13	15	10	10
Egypt	554	570	610	1,533	1,837	2,140
Ethiopia	1,092	1,110	1,100	846	850	750
Kenya	119	100	100	197	149	144
Libya	167	110	115	50	60	70
Morocco	1,903	2,040	1,917	2,102	1,574	1,853
Mozambique	9	6	6	8	6	6
Nigeria	3	2	3	6	4	6
Rhodesia	15	25	28	46	70	85
South Africa	1,895	2,025	1,865	1,475	1,865	1,605
Sudan	114	101	182	126	145	300
Tanzania	47	43	50	61	50	50
Tunisia	845	1,050	1,000	536	885	810
Zaire, Republic of	1	3	3	1	3	3
ASIA	67,339	69,957	71,304	72,106	78,804	77,425
Afghanistan	2,735	3,000	2,950	2,618	3,180	2,650
Bangladesh	148	305	350	92	109	150
Burma	73	80	80	42	50	50
China, People's Republic of	24,420	25,000	25,500	24,300	28,000	27,700
Cyprus	72	15	65	74	10	100
India	16,992	19,463	19,057	21,105	24,735	22,072
Iran	4,280	4,300	4,270	3,887	3,950	3,700
Iraq	1,570	1,200	1,800	1,276	957	1,600
Israel	109	101	103	191	242	262
Japan	224	75	83	594	202	232
Jordan	261	150	293	168	60	280
Korea, Democratic People's Republic of	160	160	160	89	85	85
Korea, Republic of	154	70	67	326	162	136
Lebanon	53	50	72	46	30	70
Mongolia	347	360	360	228	285	285
Nepal	199	240	240	220	225	225
Pakistan	6,030	5,973	6,190	6,739	7,800	7,800
Saudi Arabia	100	100	100	146	150	200
Southern Yemen	14	14	14	13	71	28
Syria	1,216	1,200	1,350	968	500	1,500
Taiwan	3	1		5	1	
Turkey	8,180	8,100	8,200	8,980	8,000	8,300
OCEANIA	8,423	9,030	9,023	10,008	12,339	11,891
Australia	8,311	8,956	8,950	9,637	12,094	11,700
New Zealand	113	74	73	371	245	191
World total	213,754	217,136	221,737	323,668	366,541	346,752

¹Years shown refer to years of harvest in the Northern Hemisphere. Harvests of Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow.

11.35 Estimated production of oats and barley harvested¹ in 1973 and 1974 in specified countries, with average for 1968-72 (thousand metric tons)

Continent and country	Oats			Barley		
	Average 1968-72	1973	1974P	Average 1968-72	1973	1974P
NORTH AMERICA	<i>18,167</i>	<i>14,804</i>	<i>13,013</i>	<i>19,309</i>	<i>19,601</i>	<i>15,502</i>
Canada	5,331	5,041	3,929	9,691	10,224	8,585
Mexico	42	83	77	228	200	210
United States	12,794	9,680	9,007	9,390	9,177	6,707
SOUTH AMERICA	<i>665</i>	<i>798</i>	<i>545</i>	<i>1,179</i>	<i>1,345</i>	<i>979</i>
Argentina	463	561	316	585	732	386
Bolivia	—	—	—	63	65	—
Brazil	27	27	27	28	26	26
Chile	108	150	128	107	150	136
Colombia	—	4	3	94	97	124
Ecuador	1	1	1	102	79	87
Peru	—	—	—	160	165	170
Uruguay	66	55	70	39	31	50
EUROPE	<i>19,482</i>	<i>17,913</i>	<i>18,787</i>	<i>49,207</i>	<i>57,090</i>	<i>60,722</i>
EEC						
Belgium	298	254	249	577	688	685
Denmark	719	444	485	5,251	5,507	6,087
France	2,812	2,203	2,030	9,214	10,844	10,121
Germany, Federal Republic of	4,003	4,155	4,507	5,166	6,622	7,022
Ireland	219	162	152	822	905	1,018
Italy	459	419	460	326	458	552
Luxembourg	44	43	40	56	56	55
Netherlands	244	134	157	365	383	310
United Kingdom	1,273	1,086	1,000	8,452	9,007	9,050
Total, EEC	10,072	8,900	9,080	30,223	34,470	34,900
Austria	285	284	290	922	1,087	1,238
Finland	1,240	1,169	1,113	948	992	963
Greece	110	102	118	693	857	983
Malta and Gozo	—	—	—	2	2	3
Norway	219	349	404	555	535	649
Portugal	98	79	94	70	57	72
Spain	501	427	560	3,964	4,402	5,388
Sweden	1,579	1,209	1,560	1,833	1,768	2,300
Switzerland	35	39	46	142	173	200
Total, Western Europe	14,139	12,558	13,265	39,353	44,343	46,696
Albania	17	17	17	9	10	10
Bulgaria	88	90	100	1,111	1,485	1,200
Czechoslovakia	848	756	750	2,482	2,971	3,300
German Democratic Republic	792	805	900	2,198	2,848	3,100
Hungary	71	67	60	790	871	800
Poland	3,102	3,220	3,251	2,155	3,158	3,911
Romania	128	102	91	655	730	911
Yugoslavia	297	298	353	452	674	794
Total, Eastern Europe	5,344	5,355	5,522	9,854	12,747	14,026
USSR (Europe and Asia)	<i>13,531</i>	<i>17,516</i>	<i>15,257</i>	<i>34,222</i>	<i>55,044</i>	<i>54,161</i>
AFRICA	<i>172</i>	<i>143</i>	<i>147</i>	<i>4,067</i>	<i>3,735</i>	<i>4,797</i>
Algeria	41	32	38	479	400	450
Egypt	—	—	—	102	110	112
Ethiopia	—	—	—	1,531	1,500	1,400
Libya	—	—	—	91	100	100
Morocco	25	20	—	1,686	1,255	2,387
South Africa	106	91	109	30	32	48
Tunisia	—	—	—	148	338	300
ASIA	<i>1,344</i>	<i>1,317</i>	<i>1,317</i>	<i>18,632</i>	<i>16,691</i>	<i>18,016</i>
Afghanistan	—	—	—	347	375	375
Bangladesh	—	—	—	20	16	16
China, People's Republic of	840	900	900	6,560	7,000	7,150
Cyprus	—	—	—	78	15	115
India	—	—	—	2,801	2,379	2,327
Iran	—	—	—	1,054	900	800
Iraq	—	—	—	814	680	1,000
Israel	—	—	—	22	18	38
Japan	68	41	37	647	216	233
Jordan	—	—	—	35	14	65
Korea, Republic of	—	—	—	1,989	1,778	1,705
Lebanon	—	—	—	8	6	18
Pakistan	—	—	—	101	109	139
Saudi Arabia	—	—	—	34	35	35
Syria	—	—	—	441	250	700
Taiwan	—	—	—	1	—	—
Turkey	437	376	380	3,679	2,900	3,300
OCEANIA	<i>1,371</i>	<i>1,182</i>	<i>1,130</i>	<i>2,348</i>	<i>2,612</i>	<i>2,890</i>
Australia	1,316	1,111	1,085	2,098	2,404	2,595
New Zealand	55	71	45	250	208	295
World total	54,733	53,673	50,196	128,965	156,118	157,067

¹Years shown refer to years of harvest in the Northern Hemisphere. Harvests of Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow.

11.36 Supply and disposition of Canadian grain, crop years ended July 31, 1972 and 1973 (million bushels)

Item	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed
CROP YEAR 1971-72						
Carryover, Aug. 1, 1971	734.2	125.4	144.3	12.9	25.3	11.0
Production in 1971	529.6	363.5	601.6	21.9	22.4	95.0
Imports	—	—	—	—	—	—
Total, supply	1,263.7	488.9	745.9	34.9	47.7	106.0
Exports ¹	503.8	10.5	230.6	10.8	25.7	42.6
Domestic use ²	176.2	360.1	339.5	8.3	5.9	20.3
Total, disposition	679.9	370.6	570.1	19.1	31.6	62.9
Carryover, July 31, 1972	583.8	118.3	175.8	15.8	16.0	43.1
CROP YEAR 1972-73						
Carryover, Aug. 1, 1972	583.8	118.3	175.8	15.8	16.0	43.1
Production in 1972	533.3	300.2	518.3	13.5	17.6	57.3
Imports	—	—	—	—	—	—
Total, supply	1,117.1	418.5	694.1	29.3	33.6	100.4
Exports ¹	576.6	6.9	165.2	8.2	19.6	54.1
Domestic use ²	175.0	331.9	335.9	10.8	6.3	25.7
Total, disposition	751.6	338.8	501.1	19.0	25.9	79.8
Carryover, July 31, 1973	365.4	79.7	193.0	10.3	7.7	20.7

¹Includes seed wheat, wheat flour in terms of wheat; seed oats, rolled oats and oatmeal in terms of oats; and malt in terms of barley.

²Includes human food, seed requirements, industrial use, loss in handling and animal feed.

11.37 Lake shipments of Canadian grain from Thunder Bay, navigation seasons 1972 and 1973 (bushels)

Year and item	To Canadian ports	To US ports	To overseas ports	Total shipments
1972				
Wheat	324,612,818	—	7,122,385	331,735,303
Oats	24,620,884	1,604,657	4,381,183	30,606,724
Barley	151,109,450	15,063,437	2,367,309	168,540,196
Rye	1,134,171	152,221	3,151,425	4,437,817
Flaxseed	1,855,234	—	12,577,135	14,432,369
Rapeseed	3,323,867	—	15,714,257	19,038,124
Mustard seed	—	—	1,281,236	1,281,236
Total	506,656,424	16,820,315	46,594,930	570,071,669
1973				
Wheat	290,438,090	—	2,526,637	292,964,727
Oats	19,485,580	—	745,047	20,230,627
Barley	91,174,565	9,707,635	2,256,721	103,138,921
Rye	1,941,160	—	1,345,211	3,286,371
Flaxseed	2,332,533	—	8,915,476	11,248,009
Rapeseed	1,165,354	—	11,228,558	12,393,912
Mustard seed	—	—	1,046,995	1,046,995
Total	406,537,282	9,707,635	28,064,645	444,309,562

11.38 Licensed grain storage capacity and grain in store, crop years 1971-72 and 1972-73

Crop year and storage position	Licensed storage capacity	Canadian grain ¹ in licensed storage				Proportion of licensed storage capacity occupied		
	Dec. 1, 1971 '000 bu	Dec. 1, 1972 '000 bu	Mar. 29, 1972 '000 bu	July 31, 1972 '000 bu	Dec. 1, 1971 %	Mar. 29, 1972 %	July 31, 1972 %	
1971-72								
Primary elevators	385,420	240,776	251,972	216,289	62.5	65.4	56.1	
Process elevators	13,624	8,271	7,299	8,484	60.7	53.6	62.3	
Interior terminals	17,100	8,584	5,957	9,689	50.2	34.8	56.7	
Pacific Coast	28,319	13,741	10,245	14,795	48.5	36.2	52.2	
Churchill	5,000	1,281	1,251	4,517	25.6	25.0	90.3	
Thunder Bay	105,486	58,213	68,443	62,428	55.2	64.9	59.2	
Georgian Bay and upper Lake ports	34,050	28,188	6,523	18,566	82.8	19.2	54.5	
Lower Lake and upper St. Lawrence ports	19,100	9,217	5,626	9,953	48.3	29.5	52.1	
Lower St. Lawrence ports	69,107	34,900	23,503	28,925	50.5	34.0	41.9	
Maritime ports (excl. Newfoundland)	8,229	6,513	3,853	1,450	79.1	46.8	17.6	
Total, 1971-72	685,435	409,684	384,672	375,096	59.8	56.1	54.7	

11.38 Licensed grain storage capacity and grain in store, crop years 1971-72 and 1972-73 (concluded)

Crop year and storage position	Licensed storage capacity	Canadian grain ¹ in licensed storage				Proportion of licensed storage capacity occupied		
		Dec. 1, 1972 '000 bu	Nov. 29, 1972 '000 bu	Mar. 28, 1973 '000 bu	July 31, 1973 '000 bu	Dec. 1, 1972 %	Mar. 30, 1973 %	July 31, 1973 %
1972-73								
Primary elevators		374,493	250,235	234,003	230,313	66.8	62.5	61.5
Process elevators		13,357	7,569	7,490	7,438	56.7	56.1	55.7
Interior terminals		17,100	7,699	10,039	5,271	45.0	58.7	30.8
Pacific Coast		28,319	17,107	13,756	13,677	60.4	48.6	48.3
Churchill		5,000	2,050	2,050	3,479	41.0	41.0	69.6
Thunder Bay		103,986	60,234	73,750	56,943	57.9	70.9	54.8
Georgian Bay and upper Lake ports		34,050	25,064	7,617	10,445	73.6	22.4	30.7
Lower Lake and upper St. Lawrence ports		17,100	9,263	7,677	3,988	54.2	44.9	23.3
Lower St. Lawrence ports		65,807	33,041	18,247	17,177	50.2	27.7	26.1
Maritime ports (excl. Newfoundland)		8,229	5,032	2,780	2,025	61.1	33.8	24.6
Total, 1972-73		667,441	417,294	377,409	350,756	62.5	56.5	52.6

¹Wheat, oats, barley, rye, flaxseed and rapeseed.**11.39 Wheat milled for flour, and production and exports of wheat flour, 10-year average 1961-70 and crop years ended July 31, 1971-74**

Crop year	Wheat milled for flour '000 bu	Wheat flour production cwt	Wheat flour exports	
			Amount cwt	Production %
Av. 1960-61 — 1969-70	90,403	40,269,773	14,243,686	35.4
1970-71	87,467	38,534,863	10,802,813	28.0
1971-72	88,124	39,071,806	10,745,908	27.5
1972-73	86,390	38,049,127	10,154,053	26.7
1973-74	84,660	37,377,341	8,173,422	21.9

Sources

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Chapter 12

Mines and minerals

12.1 Canada's mineral industry

12.1.1 Review of the industry

The Canadian mineral industry experienced strong growth during 1973 following increased world demand for minerals and accelerating prices of most non-ferrous metals. The value of mineral production in 1973 increased 31% compared with an increase of 7% the previous year.

Canada's mineral production in 1973 was valued at \$8,365 million compared with \$6,405 million in 1972 and \$5,963 million in 1971. Metal mines output and mineral fuels production both showed large increases in value of \$900 million and \$860 million, respectively, in 1973; non-metal mines showed a moderate increase of about \$100 million.

Canada produces about 60 different minerals from domestic deposits. The 10 leading minerals comprised 83% of the total output by value in 1973 compared with 82% in 1972 and 83% in 1971. The 1973 value for the 10 leading minerals totalled \$6,965 million. Individual values were: petroleum \$2,247 million, copper \$1,158 million, nickel \$813 million, zinc \$653 million, iron ore \$606 million, natural gas \$452 million, natural gas by-products \$349 million, cement \$241 million, asbestos \$234 million and sand and gravel \$213 million. The first four accounted for 58% of the total value of mineral production in 1973 compared to 56% the previous year (Tables 12.1 - 12.5).

Canada produces nearly all the minerals needed for modern economies although a few, such as manganese, chromium, bauxite and tin, are imported from lower-cost sources.

The strength of Canada's mineral industry is based on export sales. About 87.7% of the total mineral production was exported with crude minerals comprising 53.8% of the total mineral exports. Apparent consumption of minerals in Canada ranged from 28.3% for copper to 9.8% for zinc.

Exports of minerals and fabricated mineral products have led to several periods of sustained expansion in the Canadian economy in the past and they have been a major factor in the recent increase in Canada's export trade. In 1973 these exports were valued at \$7,335.6 million or 29.8% of the \$24,644.0 million total of merchandise exports. This proportion is typical of the past decade and has been maintained despite the sharp increase in Canada's automobile trade with the United States in the late 1960s. Increased demand in the United States was the main factor in the increase in Canada's exports. The major consumers of Canada's exports of mineral products were: the United States 61.8%, Japan 12.5%, Britain 8.1%, and the European Economic Community 7.8%. Comparable percentages for 1972 were: United States 64%, Britain 9.7%, Japan 9.1% and EEC 7%. Exports to Japan increased markedly although the United States remained Canada's most important export customer.

Mineral production is divided into four sectors: metallics, non-metallics, mineral fuels and structural materials. The contribution of each of these groups to the total value of production in 1973 was as follows (1972 figures in parentheses): mineral fuels 38.6% (37%), metallics 46% (46%), non-metallics 7.3% (8%) and structural materials 8.1% (9%). The value of mineral fuels production increased with the continued rise in export sales. Structural materials are sold mainly in the domestic market where the demand is more stable.

Canada leads the world in mineral exports and ranks third in mineral production behind the United States and the Soviet Union. The mineral industry has always been a major factor in Canada's economic development and is still the main force in the northward advance of Canada's frontiers of population and economic activity.

The prices of most minerals, especially the non-ferrous metals, showed great strength in 1973. This is partly due to inflation and partly a result of a greater than anticipated economic expansion in the United States, Japan and Europe. The price index for ferrous metals, iron ore, ferro-alloys and additives showed an increase of 12.8% over 1972. Non-ferrous metals, after declining from their peak value in 1970, registered a 30% gain in 1973 and non-metallic

mineral prices continued to increase rapidly. The value of non-metallic minerals showed an increase of 19.7%.

Petroleum, natural gas, copper, nickel, zinc and iron ore together contribute three quarters of the total Canadian mineral output value and some discussion of production locations and markets is warranted.

Petroleum and natural gas production and refining is Canada's largest mineral industry. Domestic production and exports are small in the context of the world's industry but are of great significance to Canada. The industry's growth in the past two decades has been of particular importance because of its effect on the balance of payments, as a source of revenue to the several levels of government, and for its impact on engineering and construction.

In 1973 total production of crude oil, gas and gas by-products was valued at \$3,047 million, an increase of 37.4% over the 1972 value of \$2,217 million. Crude oil production is concentrated in Alberta, with Saskatchewan in second place and minor production elsewhere. The pattern of crude oil distribution in Canada reflects the National Oil Policy, which allocates markets west of the Ottawa Valley to Canada's mid-continent producers, while Quebec and Maritime markets are supplied by oil from overseas. The mid-continent producers have an export market in mid-continental United States which in 1973 almost equalled the volume imported into eastern Canada. Canada produces oil almost equivalent to its total domestic needs but until the end of 1973 was unable to supply the eastern market at a competitive rate because wellhead prices were higher than imported crude. Alberta oilfields are producing at close to capacity and the region's economic reserves of oil will last 12 years at current depletion rates. Canada's North is the focus of much optimism for large-scale oil finds.

Natural gas is an important domestic product and an increasingly important export product. Generally gas and oil are found together. In Canada, the western provinces have the major proven reserves of gas. The value of the production of gas and gas by-products in Canada in 1973 was \$800.7 million, compared with that of oil at \$2,246.7 million.

Canada's gas reserves are sufficient for 17 years but the known reserves of commercial gas declined for the first time in 1972. This does not include the discoveries of gas in the Arctic because there is as yet no economical method of transporting it to markets in the south. Sales of natural gas and gas by-products totalled \$800.7 million, an increase of 23.5% compared to the previous year. Existing proven reserves of gas in Canada are sufficient to meet normal domestic market growth and to continue meeting present export commitments only in the short term. However, if long-term domestic market growth and current exports to the United States are to be maintained, additional reserves of natural gas must be found in the next decade.

Copper was second by output value in 1973. Production of recoverable copper from Canadian mines rose to 908,241 tons, an increase of 14.5% over the previous year. Copper remained in over-supply in the world but a better balance between supply and demand was achieved during 1973. Copper is produced in all provinces except Prince Edward Island and Alberta. British Columbia, Ontario and Quebec accounted for 38.6%, 31.6% and 17.4% of copper production in 1973, respectively.

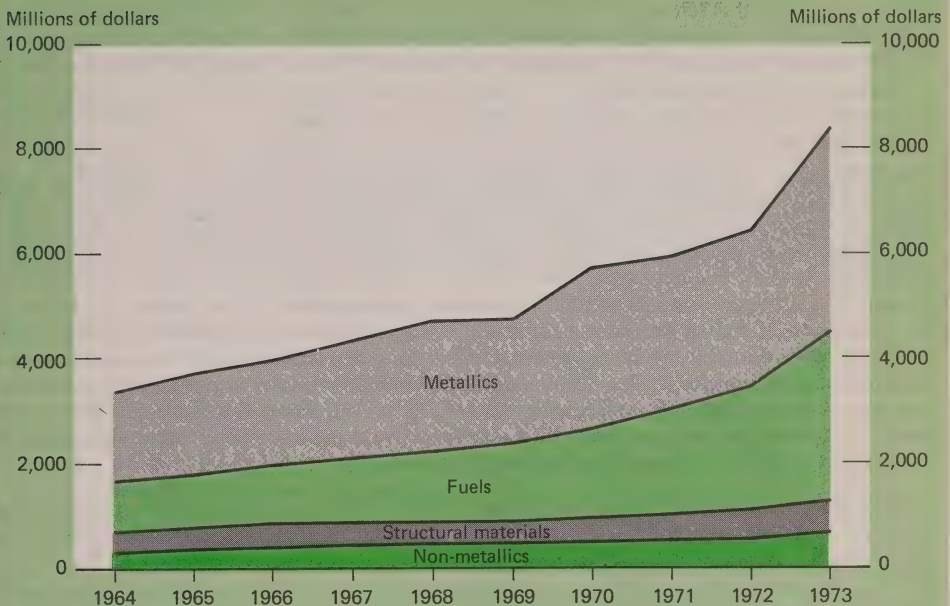
Nickel ranked third among Canadian minerals produced in 1973. World over-supply, which led to the accumulation of large stockpiles by Canadian producers during 1971 and 1972, eased in 1973 as demand increased and the market stabilized. Canada is the world's leading producer of nickel.

Iron ore production increased in 1973 to 52.4 million tons. Production was valued at \$606 million, an increase of 12.4% compared to the previous year. Of the 37.1 million tons exported in 1973, the United States received 21.3 million, Britain 4.8 million, Western Europe 7.4 million and Japan 3.9 million. Present Canadian production capacity is about 63 million tons a year including pelletizing capacity of 31 million tons a year. Projects currently under way in the Quebec-Labrador area will increase both production and pelletizing capacities. Newfoundland, Quebec, Ontario and British Columbia are the only producers of iron ore.

Zinc production in 1973 attained a record value of \$652.9 million, an increase of 38% over 1972 although production increased only 9%. Canada remained the world's leading mine producer.

In 1973 mineral investment (including both capital and repair expenditures) in mineral fuels was \$1.1 billion, 15.3% higher than 1972, compared with non-metal mines at \$267.7

Value of mineral production, 1964-73



million that rose 1.5% and metal mines at \$894 million that fell 3.5%. Similarly, in mineral manufacturing, investment in non-metallics at \$389 million was 29% higher than 1972, compared with petroleum and coal products at \$388.5 million that rose 21.5% and primary metals at \$16.4 million that rose 3.3%.

Over-all capital expenditures increased in the minerals sector and the mineral fuels sector (excluding coal). Investment in iron mines increased slightly to \$273.0 million. Capital expenditures in the mineral fuels sector (excluding coal) increased to \$961.9 million, an increase of 17.2% over the previous year, with more emphasis being placed on exploration in areas where new finds of gas and oil have been reported.

The volume index of mineral production, which measures the mining industry's absolute growth (1961=100), increased to 210.5 from 192.2 in 1972. In comparison the volume index of total industrial production increased to 214.8 from 198.3 in 1972.

Alberta and Ontario accounted for 33.0% and 22.2%, respectively, of the Canadian output value of minerals in 1973. Alberta produced 30.9% and Ontario produced 24.0% of the output value of minerals in 1972. In 1973 British Columbia accounted for 11.7%, Quebec 11.1%, Saskatchewan 6.1%, Manitoba 5.0%, Newfoundland and Labrador 4.5%, Yukon Territory 1.8%, Northwest Territories 2.0%, New Brunswick 1.9%, Nova Scotia 0.7% and Prince Edward Island for a minimal amount of the output value of mineral production. Alberta produced 83.2% of the mineral fuels, Ontario produced 39.5% of the metals and 39.7% of the structural materials, and Quebec produced 39.1% of the non-metals. Tables 12.6 - 12.8 show the mineral production and value of production by province.

Newfoundland and Labrador. Mineral production in Newfoundland and Labrador was valued at \$374.5 million compared to \$290.6 million in 1972, an increase of 28.9%. Iron ore production increased 34.8% to 24.4 million tons in Labrador. Production of lead dropped 30.7% in 1973, and zinc production dropped 67.3%. Asbestos production increased 54.5%. Fluorspar production, valued at \$4.6 million, decreased \$0.8 million in value from 1972.

Prince Edward Island. Sand and gravel is the only mining product of this province. Production, valued at \$1.7 million, increased 54.5% in value over the previous year.

Nova Scotia. Total mining production increased 7.3% in value to \$61.7 million in 1973. The quantity of coal produced in 1973 was 1.2 million tons, down from 1.4 million tons in 1972. A new mine at Lingan is scheduled to start production in 1974. Production of non-metals rose to \$24.1 million in 1973 from \$22.6 million in 1972. Gypsum accounted for \$14.5 million, 60.2% of non-metallic production. The highlight of the year in Nova Scotia was the discovery of extensive lead-zinc mineralization in the Gays River area about 30 miles northeast of Halifax by Imperial Oil Enterprises on ground held by Cuvier Mines Limited. Extensive diamond drilling continues.

New Brunswick. Mineral production increased to \$162.4 million from \$120.2 million in 1972. Metal products, which are produced mainly around Bathurst, represented 81.8% of the total mineral output. Zinc, lead and copper were the principal minerals produced. Coal production dropped to 394,219 tons in 1973 due to a lower demand by the provincial power company.

Quebec. Total mineral output was \$926.1 million, an increase of 17.8% over 1972. Metallics accounted for 55.6% of production, non-metallics 25.9%, and structural materials 18.5%. Mineral fuels production was insignificant. Copper, iron ore and zinc were the major metallics produced, accounting for 21.7%, 13.6% and 8.1% of Quebec's total mineral output. Asbestos was the major non-metallic, accounting for 19.2% of the total. Titanium dioxide, a non-metallic, is produced only in Quebec and has firm world markets; production was valued at \$46.6 million in 1973 compared to \$40.8 million in 1972.

Ontario produces minerals valued at more than \$1,853 million annually, mostly metallics. The value of metallics reversed a two-year declining trend and increased by 21.6% over the previous year. Nickel, copper, zinc, precious metals and iron ore contributed 31.0%, 19.7%, 11.9%, 9.8% and 8.2%, respectively, to the provincial output. The range of minerals is more diverse in Ontario than in any other province. Output of fuels in Ontario is relatively small. The principal non-metals — salt, nepheline syenite, asbestos, gypsum, quartz and sulphur — are produced in relatively small quantities. Structural materials produced in 1973 increased in value to \$267.3 million from \$229 million in 1972.

Manitoba. Mineral production in 1973 was valued at \$419.2 million, an increase of 29.7% from the previous year. Metallic minerals accounted for 86.8% of the total, with nickel, copper and zinc representing 54.4%, 21.7% and 7.7%, respectively. Crude petroleum contributed 4.1% of the provincial total. Manitoba produced 28.1% of Canada's nickel, an increase of 2.5% over the total value for the previous year. The value of zinc production increased 84.3% over the value for 1972.

Saskatchewan produces mainly mineral fuels and non-metals because the metal-rich geological formations of eastern Canada and the Rockies do not dominate the geology in Saskatchewan. Crude petroleum and potash represented 51.8% and 34.7% of the 1973 mineral production. Metallics constituted only 4.7% of the total. Renewed interest in uranium may result in increased production in the metals sector.

Alberta. Mineral production was valued at \$2,764.1 million in 1973 with crude petroleum, natural gas and natural gas by-products representing 94.9% of the total. Sulphur, produced as a by-product in the processing of natural gas, represented 0.8% of the mineral production. Alberta produced 84.3% of Canada's petroleum and 86.0% of Canada's natural gas in 1973. Coal production accounted for 2.2% of provincial mineral production. Structural materials made up most of the remainder.

British Columbia. Mineral output increased 43.9% to \$975.7 million in 1973. Metallics comprised 67.8% and mineral fuels 21.5% of all mineral production with copper, zinc, molybdenum and lead accounting for 45.8%, 7.5%, 5.3% and 3.1%, respectively, of the total. Coal, crude petroleum and natural gas represented 9.5%, 6.7% and 4.7% of the total production, respectively. The copper industry continued to expand rapidly with mine production value increasing 87.9% over the previous year. Coal production increased to 7.8 million tons in 1973. Asbestos was the leading non-metallic mineral produced.

Northwest Territories. The value of mineral production in 1973 increased to \$165.5 million from \$120.3 million in 1972. Metallic minerals accounted for almost all of the total. Zinc, lead, gold and silver comprised 52.9%, 19.5%, 14.7% and 8.3%, respectively, of the total mineral output. Crude oil and natural gas are of considerable potential value.

Yukon Territory. The value of production increased to \$150.7 million compared to \$106.8 million in 1972. Zinc, lead, silver, copper and asbestos made up 40.6%, 25.2%, 10.2%, 9.8% and 9.2%, respectively. Output is not large by national standards but is increasing rapidly.

12.1.2 Metals

Copper. Canadian mine production of recoverable copper amounted to 908,241 tons valued at \$1,157.5 million in 1973 (Table 12.9). Canada produced 10.8% of the world's copper and ranks as the third largest producer. World mine production of copper increased 6% over the previous year, with all major producers except Zambia and Japan registering increases. Canadian exports of copper concentrates increased 28% while exports of refined copper declined slightly. Domestic consumption of copper rose by 11%, still within the levels of the past eight years.

Copper and nickel-copper ores were smelted at five locations in Canada at the end of 1973. The International Nickel Company of Canada, Limited (INCO) continued to operate an oxygen flash smelter at Copper Cliff, Ont. Falconbridge Nickel Mines Limited operated a smelter at Falconbridge, Ont., treating nickel-copper concentrates. Ores and concentrates from most mines in the Atlantic provinces, Quebec and Ontario were processed at the Noranda smelter of Noranda Mines, Limited or at the Murdochville smelter of Gaspé Copper Mines, Limited, both in Quebec. Major expansion programs were under way or being completed, at both the Noranda and Murdochville smelters. At Murdochville, smelter capacity will be raised by 27,000 tons of anode copper a year. A 300,000 ton-a-year sulphuric acid plant is under construction and some of the acid produced will be used to leach copper from low-grade oxide ores from the Copper Mountain mine. At Noranda the smelter was expanded by the construction of a Noranda continuous smelting process reactor capable of producing 55,000 tons a year of blister copper in one furnace directly from concentrates. Operation of the reactor began early in 1973. Hudson Bay Mining and Smelting Co., Limited operates a smelter at Flin Flon, Man. Hudson Bay plans to produce anode copper instead of blister copper and has commenced the erection of an 825-ft smokestack to improve the dispersion of sulphur gases.

Electrolytic copper refineries were operated by INCO at Copper Cliff and by Canadian Copper Refiners Limited (CCR) a subsidiary of Noranda Mines, Limited, at Montreal East, Que. INCO's copper refining capacity at Copper Cliff was increased 10% by the installation of an electrowinning circuit to recover copper as a by-product from the new nickel refinery. Canadian Copper Refiners Limited completed an expansion raising its capacity to 480,000 tons of refined copper a year, making CCR the world's largest copper refinery.

Two small copper-zinc producing mines were reopened in eastern Canada; one large copper-zinc mine, a small copper mine and two copper-nickel mines began production in 1973. The largest mine to be opened was the 10,000 ton-a-day Ruttan mine of Sherritt Gordon Mines, Limited, in Manitoba. Two small copper-zinc mines and two copper-nickel mines closed during 1973. High metal prices have prolonged the life of several mines, one of which is Noranda's famous Horne mine.

Production declined 4% in the Atlantic provinces, 11% in Quebec, 1% in Ontario, and 19% in Saskatchewan. There was a major shift westward in copper mining capacity as production increased 19% in Manitoba and 50% in British Columbia.

Few new mines were scheduled for production in 1974, because of low copper prices of 1971-72, anticipated excess production capacity in the world, temporary saturation of the Japanese market for copper concentrates, and a slowdown in exploration in Canada.

Copper production in Newfoundland in 1973 totalled 8,647 tons valued at \$11.0 million from two mines, one of which was closed by a seven-month strike during the year. In New Brunswick copper production was 10,310 tons valued at \$13.2 million from four mines; two of these recommenced production late in the year. In Quebec production declined slightly to 157,841 tons valued at \$198.2 million from 176,432 tons valued at \$201.4 million in 1972. About 30 mines were operated during 1973, the main centres of production being Rouyn-Noranda, Val d'Or, Matagami, Chibougamau, Murdochville and Stratford Centre. A strike at Madeleine Mines Ltd., adversely affected production.

Copper was produced at a number of mines in Ontario in 1973, the main operations being the nickel-copper mines of the Sudbury district copper-zinc and copper mines near Timmins, and copper-zinc mines near Manitouwadge. Producers' shipments amounted to 287,324 tons valued at \$365.3 million compared to 289,723 tons valued at \$293.5 million in 1972.

Production in Manitoba and Saskatchewan was 81,557 tons valued at \$104.1 million. The major producer was Hudson Bay Mining and Smelting Co., Limited, which produced copper in the Flin Flon and Snow Lake areas. Sherritt Gordon Mines, Limited at Lynn Lake, and INCO at Thompson were the other main producers. The Ruttan mine of Sherritt Gordon Mines, Limited was the only new Canadian producer to begin operations in Manitoba in 1973.

Production of copper in British Columbia in 1973 amounted to 350,099 tons valued at \$446.7 million compared to 233,506 tons valued at \$237.8 million in 1972. Most of the production in British Columbia comes from large open-pit mines.

Production in the Yukon Territory increased substantially in 1973. Whitehorse Copper Mines Ltd., resumed production from the new Little Chief mine in December 1972. Hudson-Yukon Mining Co., Limited produced copper during 1972, but operations were suspended in 1973 because of geological problems. In the Northwest Territories copper is produced principally as a by-product of silver mining operations.

Nickel. Canadian production of nickel in 1973 amounted to 274,527 tons valued at \$813.1 million. The nickel market began to improve in the last half of 1972 and this improvement continued throughout 1973. World production of nickel increased 4.7%; Canadian production increased 6.0% compared with the previous year (Table 12.10). Consumption of nickel in the non-communist world was about 560,000 tons compared with 470,000 tons in 1972. The large inventories that had been accumulated by major nickel producers were gradually reduced to a normal supply by the end of 1973.

At Sudbury, Ont., The International Nickel Company of Canada, Limited (INCO) commenced production at its new nickel refinery. The new refinery is expected to reach its full designed annual capacity of 50,000 tons of nickel pellets and 12,500 tons of nickel powder in 1974. It uses INCO's top-blown rotary converter and pressure carbonyl process. The refinery produces pellets of 99.97% nickel and powder of 99.8% purity. Both INCO and Falconbridge Nickel Mines Limited, Canada's second largest producer, increased production in 1973 over that of 1972.

Three new nickel-copper mines began production during 1973. In the Sudbury area one Falconbridge mine and one INCO mine started production. The Langmuir mine, a joint Noranda Mines, Limited-INCO venture, near Timmins, Ont., began operations in June 1973. The Langmuir mine has a 700 ton-a-day concentrator and ships its concentrates to the Copper Cliff smelter. The Wellgreen nickel-copper mine at Kluane Lake, YT, closed in July 1973 after a year's production because underground development revealed major mining difficulties.

Iron ore shipments in 1973 increased 23% to 47,511,797 tons compared with the figure for the previous year of 38,745,917 tons (Table 12.11). Production at iron ore mines amounted to 49,419,972 tons. The small excess of production over shipments was used to replenish stocks. The value of the shipments increased 24% to \$606,106,000. All iron ore figures quoted in this text refer to long ton units (2,240 lb).

Iron ore was produced by 15 companies at 16 locations, with nine operations in Ontario, two in British Columbia, two in Quebec, two in Labrador and one in Quebec-Labrador. Estimated production capacity at the end of 1973 was 63 million tons of iron ore, of which 31 million tons was iron pellet capacity.

Newfoundland (Labrador) is the largest iron ore producing province and recorded a large increase in shipments of 5,740,471 tons or 35% compared with the previous year. In Quebec production increased 2,137,931 tons or 20%. The Iron Ore Company of Canada (IOC), the largest Canadian producer, experienced an increase in shipments of about 50% over the previous year, when operations had been hampered by protracted labour problems. Shipments from the three major facilities of IOC in 1973 attained 20,386,000 tons. IOC's expansion of the Carol Lake concentrator to 22 million tons a year and construction of a six million ton-a-year pellet plant at Sept Îles was completed in 1973. However problems experienced in the metallurgical feed, shortage of key components and skilled maintenance personnel precluded the efficient operation of these new facilities in 1973. Quebec Cartier Mining Company (QCM)

increased its shipments by 18% in 1973 to 8,805,000 tons. QCM continued to develop the Mount Wright iron ore project, despite construction slowdowns induced by labour strikes. QCM also commenced development of the Fire Lake ore deposit which was scheduled for start-up in 1975. Fire Lake ore will provide feed material to the Lac Jeannine concentrator and will replace ore from the Lac Jeannine mine, where ore reserves will be depleted by 1976.

Shipments from Wabush Mines in 1973 increased only marginally to 5.4 million tons compared with 5.3 million tons in the previous year.

With high domestic and US demand, most Ontario mines shipped iron ore at near capacity in 1973. Shipments equalled 11,274,047 tons, 6% above the 1972 level of 10,666,969 tons. Shipments from The International Nickel Company of Canada, Limited (INCO) were 624,000 tons of iron pellets, still well below rated capacity of 850,000 tons.

British Columbia's two iron ore producers had a good year in 1973 as shipments of 1,420,145 tons increased 25% compared with shipments of 1,139,745 tons in 1972. Texada Mines Ltd. continued to ship its entire production via its own bulk carrier to Japan. Wesfrob Mines Limited shipped the larger portion of its production to Japan with smaller quantities destined for consumers in Oregon and Australia.

Since a large portion of Canadian iron ore is exported (75.3% in 1972), the industry is especially sensitive to prevailing world market conditions. In 1973 a firm upward trend of general economic activity prevailed in most industrialized countries propagating a world-wide boom in steel production. World crude steel output increased by 9% to attain a new record level of 696 million tons. Thus in response to strong world demand for iron ore, total Canadian exports were 37,072,698 tons, an increase of 28% compared with 28,812,277 tons in 1972. Marked increases in Canadian iron ore exports were effected in the consumer markets of the US, Britain, Japan and the Federal Republic of Germany.

Imports increased dramatically in 1973 to 2.7 million tons, continuing the ominous reversal of a downward trend that commenced in 1964 and was maintained until 1970. Canadian imports of iron ore are expected to increase to almost 5 million tons by 1975, as import shipments from the Tilden mine in Michigan and both the Eveleth Taconite Company and Hibbing Taconite Company in Minnesota start flowing into the Canadian steel mills of The Steel Company of Canada, Limited (STELCO), Dominion Foundries and Steel, Limited (DOFASCO) and Algoma Steel Corporation Limited. Additional small quantities of high-grade Brazilian and Swedish iron ores are imported by Sidbec-Dosco Limited to be used in its new direct reduction plant at Contrecoeur, Que.

Domestic shipments reached a record high of 10.5 million tons in 1973, some 600,000 tons more than in 1972, when the previous record was set. Consumption of iron ore by Canadian steel mills increased from the 1972 level of 11.7 million tons to 13.5 million tons in 1973, an increase of about 15%.

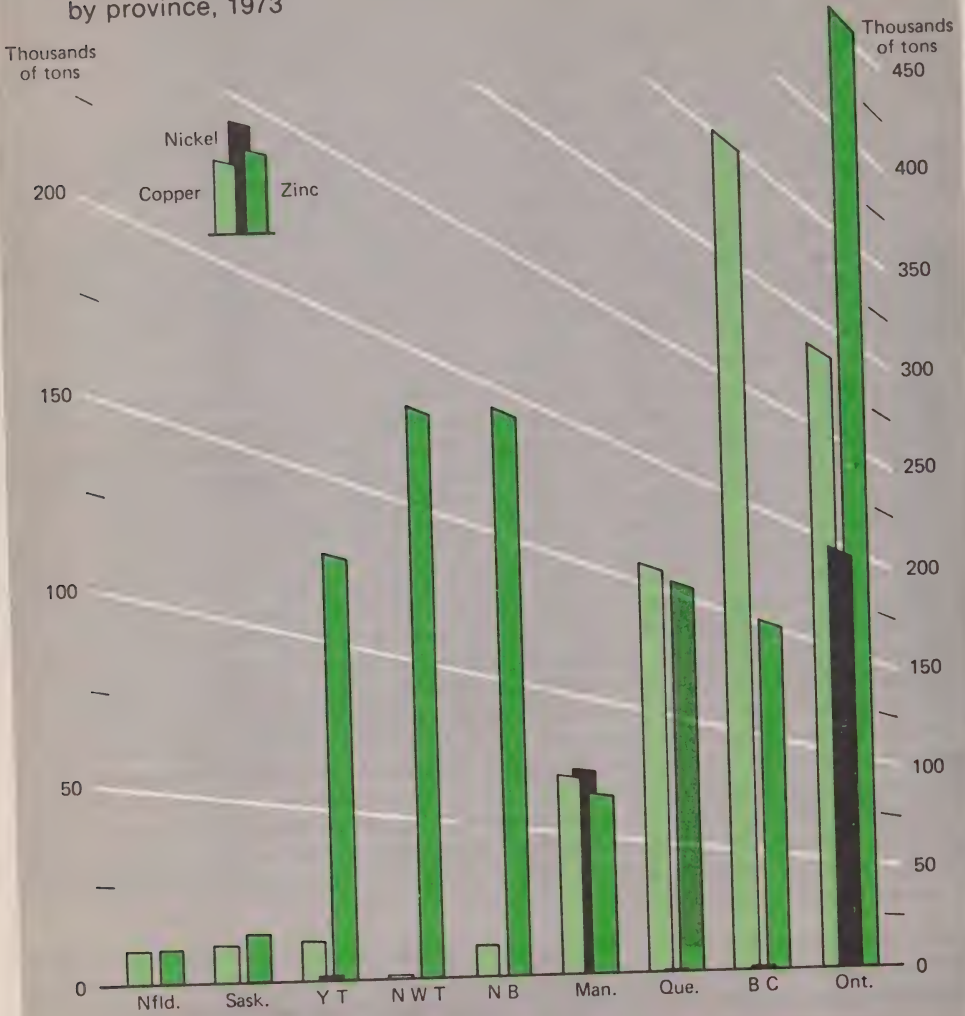
Lead and zinc. Canadian production of lead in 1973 was 376,939 tons valued at \$122 million. Mine production increased 2.0% in volume and 7.0% in value compared to the previous year (Table 12.12). Output of refined lead was 206,012 tons, a 34-ton increase from 1972.

Production of zinc in 1973 was 1.4 million tons valued at \$652.9 million. Production increased 8.6% but 37.5% in value compared to the previous year (Table 12.13). Output of refined zinc was 585,000 tons in 1973, up 11% from 1972.

Exports of refined lead in 1973 decreased by 11% from 1972. Exports of lead and zinc in ores and concentrates and lead in ores and concentrates were substantially higher in 1973. The increased exports of zinc in ores and concentrates were due mainly to additional shipments from large concentrate stocks accumulated during prior smelting capacity shortages. The increased exports of refined zinc were due mainly to a drop in US domestic metal production resulting from smelter closures and to substantial increases in US consumption.

In the Atlantic provinces lead production declined 8.5% to 52,745 tons and zinc production increased 140 tons to 201,258 tons in 1973. Three companies produced lead and zinc, one in Newfoundland and two in New Brunswick. Brunswick Mining and Smelting Corporation Limited in New Brunswick was the Maritimes' largest producer. American Smelting and Refining Company, Buchans Unit, was the only active producer in Newfoundland. Dresser Minerals, Division of Dresser Industries, Inc. continued to mill a surface stockpile of ore accumulated from previous operations at its mine in Nova Scotia.

Producers' shipments of copper, nickel and zinc,
by province, 1973



In Quebec zinc production decreased 5% to 155,259 tons. Mining companies associated with Noranda Mines, Limited produced most of the zinc in Quebec. Mattagami Lake Mines Limited, the largest producer, mined 92,997 tons in 1973. Lake Dufault Division of Falconbridge Copper Limited produced 18,975 tons of zinc in its second full year of production at the Millenbach mine. Manitou-Barvue Mines Limited, which resumed operations at its Val d'Or mine in 1972, increased production in 1973. A relatively small amount of lead was produced in Quebec.

In Ontario zinc production increased 15.6% to 456,364 tons. Ecstall Mining Limited, a wholly-owned subsidiary of Texas Gulf, Inc., operates Canada's largest zinc mine at Timmins. Production from the underground mine commenced in December 1972 and will increase until 1977 when open-pit mining operations are terminated. Geco Mines Limited recorded a substantial drop in production because of a two-month strike. Mattabi Mines Limited had its first full year of operation in 1973. Lynx-Canada Explorations Limited opened a small zinc

mine at Long Lake, Rideau Lakes area, in March 1973. Lead production in Ontario rose 8.4% to 11,496 tons. The increase was due mainly to new production from Mattabi Mines Limited. Also Geco Mines Limited and Ecstall Mining Limited produced relatively small amounts of lead.

In Manitoba zinc production increased 45.6% to 66,396 tons. Hudson Bay Mining and Smelting Co., Limited continued full production from nine mines in the Flin Flon and Snow Lake districts of Manitoba and Saskatchewan. Development of the Centennial mine, a copper-zinc orebody, began in mid-July 1973. Sherritt Gordon Mines, Limited increased production at its Fox Lake mine. The Ruttan copper-zinc mine of Sherritt Gordon started production in July 1973. A very small amount of lead was also produced.

In British Columbia zinc production increased 12.8% to 151,437 tons and lead production decreased 4.1% to 93,577 tons. Production at Cominco Ltd.'s Sullivan mine at Kimberley, the leading producer of lead and zinc in BC, was substantially higher in 1973 compared to 1972. Cominco Ltd. reopened its HB mine near Salmo which had been closed since late 1966. The Bradina mine of Bradina Joint Venture which commenced operations in 1972, closed on August 31, 1973. Western Mines Limited increased lead and zinc production in 1973.

In the Yukon Territory lead production increased 5.6% to 117,761 tons and zinc production increased 6.7% to 126,661 tons. Anvil Mining Corp. Limited, Canada's largest lead producer, expanded its concentrator from 8,000 to 10,000 tons a day by the end of the year. Lower grade ore can now be treated at a higher milling rate to maintain concentrate output. United Keno Hill Mines Limited decreased production of zinc but maintained production of lead at the 1972 level. Placer Development Limited discovered a significant zone of lead-zinc mineralization near Summit Lake on the Yukon Territory and Northwest Territories border and extensive exploration and drilling of the deposit took place in 1973. Barrier Reef Resources Ltd. made what appears to be a significant discovery, 125 miles north of Mayo, on the Goz Creek property.

In the Northwest Territories lead production increased 10.8% and zinc production increased 6.7%. Pine Point Mines Limited, the sole producer of lead and zinc, modified its concentrator to increase capacity to 11,000 tons a day and to improve metallurgy. Pine Point prepared the first of the Coronet orebodies for open-pit production in 1974. An underground program consisting of a 5,300-ft decline adit and 600 ft of drifting was completed at the Polaris property of Arvik Mines Ltd. on Little Cornwallis Island. A 25-million ton orebody grading over 20% combined lead-zinc has been outlined. A shipment of 3,600 tons of ore was sent out for metallurgical testing and a feasibility study was under way. Mineral Resources International completed a feasibility study that recommended its Strathcona Sound zinc-lead-silver deposit on Baffin Island be put into production. The ore reserves are estimated at 6.9 million tons grading 15.5% combined lead-zinc.

There were four zinc refineries in operation at the end of 1973. Canadian Electrolytic Zinc Limited in Quebec refined mostly concentrates from mines associated with Noranda Mines, Limited. Hudson Bay Mining and Smelting Co., Limited produced a record amount of refined zinc in 1973. Ecstall's zinc plant commenced production in the second quarter of 1972 and reached near-capacity-level production in the second half of 1973. Cominco's refinery operated at near capacity except for a national rail strike and an electrical fire in the zinc plant in December. Cominco is currently expanding its capacity by 10,000 tons of refined zinc a year.

The lead refinery of Cominco Ltd. at Trail, BC, with a capacity of 210,000 tons annually, and that of Brunswick Mining and Smelting Corporation Limited at Belledune, NB, with an annual capacity of 70,000 tons, were Canada's only producers of primary lead metal. The Belledune plant was converted from an Imperial Smelting Process lead-zinc blast furnace to a conventional lead blast furnace processing lead concentrates only, with a capacity of 70,000 tons of refined lead annually.

Gold. The most significant event for the gold industry in 1973 was the sharp increase in the price of gold on the open market. The metal opened the year in London at US\$64.99 an ounce troy and by June 5 had increased to a high of US\$127.00. The price was comparatively stable from August to the end of the year with the monthly average varying from US\$94.78 an oz t to \$106.53. Toward the end of December the gold price again began to show an upward trend and closed at US\$112.25 an oz t at year end. Economic problems, lack of any concrete solutions to

monetary reform, political tensions, a strong demand for gold as a hedge against inflationary pressures which were increased by higher world oil prices and a strong demand for gold by commodity speculators were the major factors contributing to the increase in price.

Because of problems related to world trade, the United States devalued its currency by 10% by increasing the official value of gold from \$38 an oz t to US\$42.2222. The enabling legislation was signed into law on September 18 and in concurrence with the International Monetary Fund (IMF) became effective on October 18, 1973. Canada raised its official gold price to the Canadian equivalent of US\$42.2222 an oz t to avoid any change in the position of the Canadian dollar in relation to its US counterpart. The two-tier gold pricing system established in the US in 1968 was terminated in November, and the central banks were permitted to sell gold from their official monetary reserves on the open market.

Gold production in 1973 was 1,954,340 oz t valued at \$190,376,168 compared with 2,078,567 oz t in 1972 valued at \$119,742,087 (Table 12.14). One gold mine opened in 1973 and no gold mines closed. At the end of the year 22 lode gold mines were in operation.

All gold produced in 1973 was sold on the open market and therefore no mines were eligible for assistance under the Emergency Gold Mining Assistance Act. Following the latest devaluation, this Act provides a guaranteed floor price of about \$52.50 an oz t to those mines eligible for maximum assistance payments.

All gold produced in the Atlantic provinces in 1973 was recovered as a by-product of base-metal mining. Gold production totalled 19,547 oz t compared with 17,316 oz t in 1972.

Gold production in Quebec in 1973 amounted to 478,680 oz t compared with 539,669 oz t in 1972. Both the lode gold mines and by-product base-metal mines recorded a decrease in production. Agnico-Eagle Mines Limited brought its property in northwestern Quebec into production in December 1973. Chibex Limited was preparing its mine in the Chibougamau district for production in 1974.

Gold production in Ontario was 922,303 oz t compared with 1,019,303 oz t in 1972. Gold produced from lode mines (91.8% of the provincial total) decreased by 11.4% from 1972.

Virtually all gold produced in the Prairie provinces was recovered as a by-product from base metal ores. Production in 1973 was 74,725 oz t compared with 68,562 oz t in 1972.

With the exception of a small amount of gold recovered from the placer deposits in the central part of the province and in the Atlin district, all gold produced in British Columbia in 1973 was recovered as a by-product of base-metal mines, mainly from the treatment of copper ores. Total gold production was 189,145 oz t compared with 122,159 oz t in 1972. The porphyry copper mines which began operations in 1972 reached capacity output in 1973 and were responsible for the increased gold production.

Gold production in the Yukon Territory was 20,865 oz t compared with 4,079 oz t in 1972. Whitehorse Copper Mines Ltd. recorded the first full year of production from its underground mine and was mainly responsible for increased production.

Gold produced in the Northwest Territories was recovered from lode gold mines. A sharp decrease in gold production was recorded in 1973, dropping to 249,075 oz t from 307,479 oz t in 1972. Treatment of lower grade ore was responsible for the lower output.

Lode gold mines accounted for 72.4% of the total gold produced in Canada compared with 76.9% in 1972. Gold recovered as a by-product from base-metal mining accounted for 27.4% and placer mining 0.2%. Ontario continued to be the largest gold-producing province, accounting for 47.2% of the total, followed by Quebec with 24.5%, Northwest Territories with 12.7% and British Columbia with 9.7%. Canada ranked third in world gold production in 1973, behind South Africa and the Soviet Union.

Silver. Canada's mine production of silver in 1973, 47,487,589 oz t, was 2.7 million oz t greater than in 1972 and the highest on record. Canada was the world's largest mine producer of silver.

Mine production of silver in the Atlantic provinces declined 7.0% in 1973 from the previous year. Silver output in Quebec, recovered from base-metal and gold ores, was significantly lower in 1973 than in 1972. Reduced output by American Smelting and Refining Company at its zinc-lead-copper-silver mine at Buchans, Nfld. accounted for much of the decrease. Silver output in 1973 at the Buchans mine was significantly curtailed when a seven-month labour strike interrupted operations.

Ontario was the leading silver-producing province with its output in 1973 accounting for more than 41% of Canadian mine production. The largest producer in Canada was Ecstall Mining Limited which produced copper, lead and zinc concentrates containing about 10.5 million oz t of silver at its Kidd Creek mine near Timmins.

In Manitoba and Saskatchewan most of the silver continued to come from nine base-metal mines operated by Hudson Bay Mining and Smelting Co., Limited near Flin Flon and Snow Lake, Man.

Base-metal ores continued to be the main source of British Columbia's mine production of silver. Cominco Ltd., the province's major silver producer, recovered silver from the lead-zinc-silver ores of its Sullivan mine in southeastern British Columbia and from purchased ores and concentrates. Operations were suspended August 31, 1973 at the silver-zinc-copper-lead property of Bralorne Resources Limited because of a labour shortage and uneconomic operating conditions. The property, located 28 miles south of Houston, began production in March 1972.

Much greater silver production in 1973 in the Northwest Territories resulted from higher output by Echo Bay Mines Ltd. Echo Bay and Terra Mining and Exploration Limited, which operate silver-copper properties near Port Radium on the east shore of Great Bear Lake, were the principal silver producers in the Northwest Territories.

An increase of 21.8% in silver production in 1973, compared with 1972, in the Yukon Territory resulted from greater outputs at the zinc-lead-silver mine of United Keno Hill Mines Limited and the copper-silver property of Whitehorse Copper Mines Ltd.

Base-metal ores continued to be the main source of Canadian silver output, accounting for almost 95% of total mine production in 1973. The major portion of the remaining 5% came from silver-cobalt ores mined in the Cobalt district of northern Ontario and the balance was by-product recovery from lode gold ores.

Canadian silver production was valued at \$120.0 million in 1973 (Table 12.15). The \$45.2 million increase from 1972 resulted from higher prices and greater output. The price of silver in Canada fluctuated in 1973 between a low of \$1.966 an oz t and a high of \$3.279. Reported consumption of silver in 1973 was 16,870,929 oz t compared with 8,424,314 oz t in 1972. The increase resulted mainly from a greater use of silver in coinage.

In 1973 refined silver was produced at five Canadian primary silver refineries, the largest of which was Canadian Copper Refiners Limited at Montreal East, Que. It recovered 14.6 million oz t from the treatment of anode and blister copper. The silver refinery of Cominco Ltd. at Trail, BC, was the second-largest producer, recovering some 9.6 million oz t of by-product silver in the processing of lead and zinc ores and concentrates. Other producers of refined silver were The International Nickel Company of Canada, Limited (INCO) at Copper Cliff, Ont. (from nickel-copper concentrates) and the Royal Canadian Mint at Ottawa, Ont., (from gold bullion). At Belledune, NB, Brunswick Mining and Smelting Corporation Limited, Smelting Division, recovered by-product silver bullion from lead concentrates treated in a blast furnace.

Uranium. Canadian uranium shipments decreased 2.5% in 1973 to 4,759 tons of uranium oxide (U_3O_8) (Table 12.16). The bulk of production came from the Elliot Lake area of Ontario where Denison Mines Limited and Rio Algom Mines Limited recover uranium from quartz-pebble conglomerates. Eldorado Nuclear Limited, Canada's third largest producer, recovers uranium from pitchblende occurring in vein-type deposits near Uranium City, Sask. Denison operated its mill at about 70% of its nominal 6,000 ton-a-day capacity. Rio Algom operated its Quirke mill at 95% of its full 4,500 ton-a-day capacity during 1973. The New Quirke mine now supplies the mill's total feed and is operating at about 6,500 tons a day, well in excess of its original design capacity. In Saskatchewan, Eldorado continued operating its 1,800 ton-a-day mill at about half capacity.

Uranium exploration activity in Canada was low in 1972. Amok Ltd. continued its program at Cluff Lake in the Carswell Dome area of Saskatchewan and identified two deposits of conventional grade in addition to the high-grade ore body announced in 1972.

Gulf Minerals Canada Limited continued development work at its Rabbit Lake property, near the southwestern end of Wollaston Lake in northern Saskatchewan. Construction of the mill, capacity 4.5 million lb. of uranium oxide a year, proceeded on schedule with first production expected in 1975.

Denison amalgamated with Stanrock Uranium Mines Limited, which produced uranium from an adjoining property until 1970. An exploration drive was begun in 1973 which will link the two properties and provide an additional airway to the surface. In addition a 25-ft diameter, 1,750-ft ventilation air intake was being raised to Roman Island in Quirke Lake.

In August 1973 Uranium Canada, Limited (UCAN) and Denison announced that 1,000 tons of uranium oxide would be delivered to Tohoku Electric Power Company Inc. from the Denison-UCAN stockpile and from the general government stockpile over the period 1977 to 1981. Late in the year Denison announced that agreement had been reached in principle with the Tokyo Electric Power Co. Inc. (TEPCO) for the supply of 40 million lb. of uranium oxide over the period 1984 to 1993. Gulf Minerals Canada Limited announced that it was nearing completion of a contract covering a Japanese utility's requirements in the period 1978 to 1980.

Canadian uranium commitments, made since 1966 to both domestic and export markets totalled over 78,000 tons of uranium oxide by the end of 1973; of this total some 13,000 tons had been delivered leaving a forward commitment of over 65,000 tons (not including the TEPCO-Denison Agreement, announced in December), about 90% of which is destined for export, primarily to Western Europe and Japan. By year-end, Canadian producers were reporting a dramatic increase in numbers of inquiries from potential customers and indications were that negotiations were under way with utilities in a number of countries.

No significant increase in production is expected until 1975 when capacity will reach about 8,500 tons of uranium oxide a year, with the completion of Gulf's Rabbit Lake project and Denison's expansion. Canada does have some additional productive capability based on known lower-cost reserves, but realization of production levels much beyond 14,000 tons a year will be contingent on the discovery of new reserves.

Molybdenum. Canadian shipments of molybdenum in 1973 amounted to 30.4 million lb. valued at \$51.8 million. Shipments increased 7% in volume and 17.7% in value compared to the previous year. Canada remained the second largest producer in the world (excluding the Sino-Soviet bloc) with 18% of world production.

Before 1969 production of molybdenum as a co-product or by-product from large tonnage, low-grade copper-molybdenum deposits in Canada was not significant. The opening of large copper deposits in which molybdenum is a secondary mineral have increased the proportion of molybdenum so recovered to approximately one half of the total Canadian production.

Quebec produced a small amount of molybdenum in 1973. Gaspe Copper Mines, Limited produced 277,000 lb. of molybdenum in concentrate as a by-product of its copper operation.

In British Columbia, Brenda Mines Ltd., near Kelowna, produced 8.2 million lb. of by-product molybdenum. Endako Mines Division of Canex Placer Limited at Endako, is the largest primary molybdenum producer in Canada. Mine production in 1973 was 11.9 million lb. consisting of 8.5 million lb. of molybdenum in oxide and 3.4 million lb. in concentrate. About half of the production is exported to Europe and 35% to Japan. Lornex Mining Corporation Ltd. near Ashcroft reached its design capacity during the year and production was 3.5 million lb. of molybdenum in concentrates. Utah Mines Ltd. near Port Hardy produced 1.1 million lb. of by-product molybdenum in its second full year of operation. Gibraltar Mines Ltd. in the Cariboo District completed its first full-production year. Production was 0.46 million lb. of molybdenum recovered from molybdenum-copper ores. At the end of May, KRC Operators, a subsidiary of King Resources Company, closed its mine and mill operations at its Mt. Copeland property, near Revelstoke, BC. During its life, the mine produced 2.65 million lb. of molybdenum. Noranda Mines, Limited reopened its Boss Mountain mine in British Columbia; mill start-up commenced in December 1973 and full-scale production at an annual rate of 2.5 million lb. of molybdenum was expected to commence in early 1974. Canadian molybdenum roasting capacity in 1973 was estimated at 30 million lb. of molybdenum.

Platinum group metals. Production of platinum group metals in 1973 was 354,223 oz t valued at \$41,993,743 compared with 406,048 oz t in 1972 valued at \$34,656,545. A change in the recovery process at one of the producers resulted in a build-up of platinum metals in its circuits and was responsible for production volume being below what might have been anticipated. The price of most of the platinum metals increased substantially in 1973. Canada produces platinum metals as a by-product of nickel refining. When nickel matte is electrolytically

refined, the platinum group metals — platinum, palladium, rhodium, ruthenium, iridium and osmium — are precipitated in the electrolytic tanks as a sludge. The sludge is upgraded and sent to refineries in Britain and the US for recovery of the platinum metals. Canada ranked third in world platinum metals production in 1973 behind the Soviet Union and South Africa.

The automotive manufacturing firms in the US have generally made commitments for the use of platinum metals for their exhaust emission control devices. To meet this increased demand, South African producers were expanding plant capacities.

Cobalt. Canadian shipments of cobalt amounted to 3.34 million lb. valued at \$8.9 million in 1973 compared with 3.35 million lb. valued at \$8.3 million in 1972. Cobalt is recovered as a by-product of nickel-copper ores and to a lesser extent from silver-cobalt ores.

Canada's leading producer, The International Nickel Company of Canada, Limited (INCO), recovers cobalt in the form of crude oxide at its nickel refineries at Port Colborne, Ont. and Thompson, Man. Cobalt oxide and salts are also recovered at INCO's nickel refinery at Clydach, Wales. In October 1973 a new INCO nickel refinery was opened at Copper Cliff, Ont. The refinery has an annual capacity of 100 million lb. of nickel pellets, 25 million lb. of nickel and nickel-iron powders and half a million lb. of cobalt as high purity salts. During 1973 the company's cobalt production was 1.99 million lb. compared with 2.21 million lb. in 1972. Falconbridge Nickel Mines Limited ships nickel-copper matte from its mine at Falconbridge, Ont. to Kristiansand, Norway for refining. The refinery which was damaged by fire during 1972 was completely rebuilt and in the seven months of operation in 1973 it produced 1.61 million lb. of cobalt. Falconbridge continued construction on its new refinery complex at Bécancour, Que. When completed in 1975, the refinery will produce 500,000 lb. of cobalt a year in high purity cobalt salts.

Sherritt Gordon Mines, Limited recovers metal powder from nickel refinery end-solutions at its hydrometallurgical refinery at Fort Saskatchewan, Alta. The refinery treats nickel-copper concentrates from its Lynn Lake mine operation in Manitoba and also treats, on a toll basis, concentrates from the Giant Mascot Mines Limited mine near Hope, BC and from Western Mining Corporation Limited's nickel operations in Western Australia. During 1973 Sherritt Gordon Mines, Limited refined 119,000 lb. of cobalt from its Lynn Lake concentrates and 497,000 lb. from purchased feed. This was a reduction of 25% from the respective 1972 values of 117,000 lb. and 692,000 lb. and was due predominantly to reduced cobalt content in the refinery feed in 1973.

Columbium (niobium) and tantalum. Canadian shipments of columbium as columbium pentoxide (Cb_2O_5) were 3.18 million lb. valued at \$4.23 million in 1973 compared with 3.87 million lb. valued at \$3.87 million in 1972.

St. Lawrence Columbium and Metals Corporation, with a mine, mill and concentrator near Oka, Que. is Canada's only producer of columbium and has one of only two mines in the world that produce columbium in pyrochlore concentrates as a primary product; the other larger operation is near Araxa, Brazil.

Copperfields Mining Corporation and Quebec Mining Exploration Company (SOQUEM) continued development of the St-Honoré columbium pyrochlore deposit some eight miles north of Chicoutimi, Que. The mill has been designed for an initial capacity of 1,500 tons of ore a day with provision for rapid expansion to 2,000 tons a day should future demand requirements dictate. The project will be brought into production under the name "Niobec Inc."

Shipments of tantalum pentoxide in 1973 were 170,582 lb. valued at \$1,164,749 which compares with 41,120 lb. valued at \$246,658 in 1972. The US is Canada's largest tantalum export market, and in April 1973, the US General Services Administration (GSA) decided it would offer 756,000 lb. of tantalum for sale in the fiscal year 1974 starting July 1, 1973. In June, however GSA modified its decision and reduced its disposal rate to 400,000 lb. in order to prevent disruptions in commercial prices and markets.

Tantalum Mining Corporation of Canada Limited (Tanco) at Bernic Lake, Man. is Canada's sole producer. On April 1, 1973 production of tantalum ore and concentrates was suspended because accumulated inventories were sufficient for forward sales, and in June 1973 all sales were suspended indefinitely due to a depression of the market price below the \$10 a lb. set by Tanco as a minimum selling price.

Tungsten. Canadian production (shipments) in 1973 was 4.6 million lb. of tungsten trioxide contained in scheelite concentrates, an increase of 4% from the previous year. Tungsten concentrates were produced by two mines: Canada Tungsten Mining Corporation Limited at Tungsten in the Northwest Territories and Canex Placer Limited near Salmo, BC. Canex Placer Limited ceased operations following depletion of ore reserves. Canada Tungsten proceeded with the exploration and development of the "E" zone orebody, discovered late in 1971, and began underground mining in early 1974. Known reserves will sustain production at current rates for 20 years. Production from the company's open-pit mine ceased in late 1973.

In February of 1973, Amax Exploration, Inc., a subsidiary of American Metal Climax, Inc., reported that it had identified a scheelite deposit in the Yukon Territory, about 240 miles northeast of Whitehorse. Over 30 million tons, grading 0.9% tungsten trioxide, have been outlined by drilling. Further exploration and preliminary metallurgical and feasibility studies are being carried out. Brunswick Tin Mines Limited is continuing the investigation of a complex orebody near Fredericton, NB. The ore contains a number of potentially recoverable minerals including tungsten. An adit will be driven to the main orebody to extract bulk samples in order to determine the efficiency of an ore treatment process devised by the Department of Energy, Mines and Resources.

Cadmium. Cadmium production in 1973 was 4.2 million lb. valued at \$15.3 million compared to 4.3 million lb. valued at \$10.8 million in 1972. Most of the zinc ores in Canada contain cadmium in quantities varying from 0.001% to 0.067% recoverable cadmium, and zinc concentrates contain up to 0.7% cadmium. The largest mine production comes from Kidd Creek mine near Timmins, Ont., followed by the Geco Mines Limited mine, at Manitouwadge, Ont. Other important producers are Cominco Ltd. in British Columbia, Hudson Bay Mining and Smelting Co., Limited in Saskatchewan and Manitoba, the Noranda group of companies in Ontario, Quebec and New Brunswick, Pine Point Mines Limited in the Northwest Territories and Anvil Mining Corp. in the Yukon Territory.

Cadmium is recovered as a by-product from the smelting and refining of zinc ores and concentrates. Metallic cadmium is recovered as a by-product at the electrolytic zinc plants of Cominco Ltd. at Trail, BC, Hudson Bay Mining and Smelting Co., Limited at Flin Flon, Man. and Canadian Electrolytic Zinc Limited at Valleyfield, Que. New production was also recorded at Ecstall's plant near Timmins, Ont. In 1973 metallic cadmium produced in Canada totalled 3.1 million lb. compared with 2.3 million lb. in 1972.

Selenium and tellurium. Production of selenium in 1973 decreased to 521,110 lb. valued at \$4.8 million from 582,060 lb. valued at \$5.2 million in 1972. Production of tellurium increased to 92,284 lb. valued at \$560,164 from 45,649 lb. valued at \$271,155 in 1972. Selenium and tellurium are recovered from the anode muds resulting from the electrolytic refining of copper at the plants of Canadian Copper Refiners Limited at Montreal East, Que. and The International Nickel Company of Canada, Limited at Copper Cliff, Ont.

Magnesium. Canadian production of magnesium was 6,835 tons valued at \$5.5 million. Production was up from 5,924 tons in 1972 but well below the 10,637-ton output reached in 1969. Exports of Canadian magnesium metal have entered the US duty-free under the Canada — US Defense Production Sharing Program but this program has recently operated on a reduced scale. Although the US duty on magnesium ingots and further-processed products has been reduced progressively in accordance with the Kennedy Round of trade negotiations under the General Agreement on Tariffs and Trade, only in certain high purity items can the Canadian product find a market in the US. Exports of Canadian magnesium ingots face a 20% tariff when entering the US domestic market whereas the comparable Canadian tariff is 5%. Releases from the General Services Administration stockpile in the US totalled 69,516 tons of magnesium metal in 1973, up substantially from the 7,737 tons released in 1972, creating additional marketing problems for Canadian magnesium.

The only Canadian producer of primary magnesium is Chromasco Corporation Limited, which has operated a mine and smelter at Haley, Ont., 50 miles west of Ottawa, since 1942.

12.1.3 Industrial minerals

Asbestos. Canadian shipments of asbestos fibre were almost 1.86 million tons valued at \$234.3 million in 1973, compared with 1.69 million tons valued at \$206.1 million in 1972

(Table 12.17). All of the Canadian production consists of chrysotile and approximately 80% of it comes from Quebec, almost 6% from British Columbia, 6% from the Yukon Territory, 5% from Newfoundland and about 2% from Ontario.

Canada is the world's largest exporter of asbestos, shipping approximately 95% of its production to more than 70 countries. The United States is the largest market, followed by Japan, the Federal Republic of Germany, Britain and France. These five countries absorbed about 70% of Canadian exports, which totalled approximately 1.85 million tons in 1973 compared with almost 1.6 million tons in 1972.

The world demand for Canadian asbestos fibre strengthened in 1973. The Federal Republic of Germany showed the largest percentage increase, amounting to 46.2% greater volume of asbestos fibre in 1973 compared to 1972. Japan was next with an increase of 34.6% followed by Britain, France and the United States with 26.3%, 25.6% and 8.0% increases, respectively. However, the volume of consumption by the US amounts to more than five times that consumed by the Federal Republic of Germany, its closest rival.

Near Deception Bay in the Ungava region of Quebec, production rated at about 60% of capacity commenced at the new Asbestos Hill mine owned by Asbestos Corporation Limited. Full productive capacity of 300,000 tons of concentrate was anticipated by 1974. The final milling process in Germany will result in production of 100,000 tons of fibre (groups four and five) a year. Canadian Johns-Manville Company, Limited completed a plant expansion and relocation program as part of a \$75 million project at the Jeffrey mine and mill. A constant annual output of a minimum 600,000 tons of fibre is expected to be maintained. Bell Asbestos Mines, Ltd., continued work on a long-range modernization program which may result in increased production capacity. Underground work is proceeding in a 1,450-ft shaft preparatory to large-scale underground mining operation.

Evaluation of several potential producers in Quebec continued in 1973. McAdam Mining Corporation Limited's property about 20 miles east of Chibougamau, now under working option to Rio Tinto Canadian Exploration Limited, is being evaluated in an underground work program. Four zones drilled show indications of reserves of approximately 190 million tons grading between 3% and 4% fibre content. Abitibi Asbestos Mining Company Limited reported that underground bulk sampling and pilot plant studies proceeded under management and financing by Brinco Limited. This property is located in Maizerets Township 50 miles north of Amos. Proven ore reserves are reported at about 100 million tons; early plans indicated open-pit mining to recover approximately 155,000 tons of fibre a year. Pathfinder Resources Ltd. is continuing a feasibility study of the Lili asbestos property, 80 miles east of Montreal, near the Canadian Johns-Manville mine. Drilling has indicated the presence of 49 million tons of ore in three zones.

In British Columbia, Cassiar Asbestos Corporation Limited, Cassiar, shipped a record 108,981 tons of fibre following its 1971 mill expansion to an annual capacity of 120,000 tons of fibre. Mill expansion and general modernization continued in 1974 and 1975 at a cost of approximately \$9 million.

In the Yukon Territory over 100,000 tons of fibre was shipped from Cassiar's Clinton Creek mine. Drilling and ore reclassification resulted in a moderate net increase in probable ore reserves.

Advocate Mines Limited, Newfoundland's only asbestos producer, increased fibre shipments substantially above the 1972 level of 69,000 tons.

In Ontario total production by Hedman Mines Limited and Johns-Manville Mining and Trading Limited's Reeves mine remained approximately at the 1972 level, down 19% from the 1971 figure. The name of the Johns-Manville operation was changed to Canadian Johns-Manville Company, Limited. The Reeves mill was shut down in December to redesign and overhaul the crushing plant. Mining and milling will commence at a future date.

United Asbestos Inc. (resulting from the merger of United Asbestos Corporation Limited and Allied Mining Corporation) proposed to bring into production their Midlothian Township asbestos property. Drilling indicated 31 million tons of ore. Start-up is scheduled for mid-1975. The estimated cost of the project is \$26 million.

Potash. Canadian production in 1973, all from Saskatchewan, amounted to 4.9 million tons of potassium dioxide equivalent (Table 12.18). The installed annual capacity is 8.32 million tons

of potassium dioxide equivalent. Production allowables set by the Saskatchewan government under the prorationing plan were raised three times during 1973 because of strong demand. As of October 1, 1973, the prorationing fee was raised from 60 cents a ton of potash to \$1.20.

In New Brunswick, an exploratory drill hole intersected salt and potash near Salt Springs about 12 miles southwest of Sussex. In the Sussex area, the Potash Company of America is pursuing its exploration program.

Transportation bottlenecks hampered potash deliveries in 1973.

Salt. Salt production in Canada in 1973 increased only 2.7% from the previous year. Canadian shipments of salt amounted to 5.6 million tons valued at \$49.6 million (Table 12.19). About 75% of total shipments were rock salt that is used for snow and ice control on city streets and highways and for chemical manufacturing. The remainder is fine vacuum salt and salt as brine that is used for producing caustic soda and chlorine.

There are three rock salt mines, one in Nova Scotia and two in Ontario. Salt is also produced as a by-product of potash mining in Saskatchewan. Fine salt evaporator plants and brining operations are located in Nova Scotia, Ontario, Manitoba, Saskatchewan and Alberta.

A joint federal-provincial exploration program discovered a potash-salt deposit in Kings County, NB, in 1971. In 1973 a second federal-provincial program resulted in a similar discovery at Salt Springs in the same county. In August 1972 Quebec Mining Exploration Company (SOQUEM) announced discovery of a large salt deposit in the Magdalen Islands, 50 miles north of Prince Edward Island.

Sulphur. Canadian sulphur shipments in all forms in 1973 amounted to 5.4 million tons valued at \$34.1 million (Table 12.20). Shipments increased 23% in volume and 35% in value compared to the previous year.

Canadian sulphur is obtained from three sources: sour natural gas and petroleum, which produce elemental sulphur, smelter gases which produce sulphuric acid, and pyrite concentrates which are used in the manufacture of sulphuric acid. Small amounts of elemental sulphur are recovered as a by-product of electrolytic refining of nickel sulphide matte and a small quantity of liquid sulphur dioxide is produced from pyrites and smelter gases. Eighty-four percent of Canadian sulphur shipments in 1973 were in elemental form, nearly all from sour natural gas in western Canada.

Dramatic growth over the last 10 years in the Canadian sulphur industry is due almost entirely to expanded exploitation and treatment of sour natural gas, principally in Alberta. Canadian production of sulphur in all forms in 1960 was 1 million long tons, with elemental sulphur making up only one quarter of the total. In 1973 total sulphur production was estimated at 7.97 million long tons, 7.3 million tons in elemental form. Since 1968 Canada has been the world's largest supplier of elemental sulphur.

Gypsum. In 1973 Canadian production of crude gypsum increased to 8.4 million tons (Table 12.21), 75% of which was exported to the US. Exports were mainly from Nova Scotia and Newfoundland quarries although some tonnage was shipped into the northwestern US from British Columbia.

Nine companies produced crude gypsum in Canada in 1973 at 15 locations, while five companies manufactured gypsum products at 17 locations. Production of gypsum in Canada is closely related to the building construction industry, particularly the residential building sector, in both Canada and the eastern United States.

Nepheline syenite. Nepheline syenite was produced from two operations on Blue Mountain, 25 miles northeast of Peterborough, Ont. In 1973 shipments were 569,000 tons, an increase of 2% over 1972 (Table 12.22). The value of shipments in 1973 increased 33% to \$7.9 million, with exports accounting for 78% of the total shipments. Sales to the US representing 98% of Canada's total exports, increased 5%. Nepheline syenite is preferred to feldspar as a source of essential alumina and alkalis in glass manufacture. Other uses include the manufacture of ceramics, enamels and as a filler in paints, papers, plastics and foam rubber.

Structural materials. The value of all construction undertaken in Canada in 1973 was roughly \$20.1 billion. Shipments of structural materials, including cement, sand and gravel, stone, clay and clay products and lime, were roughly \$673.1 million or 8.0% of Canada's total value of mineral production.

Canadian production of cement in 1973 was 11.1 million tons, an increase of 10.8% over the previous year (Table 12.23). Current production capacity is 15.7 million tons a year of cement. Cement was produced in all provinces except Prince Edward Island with Ontario and Quebec accounting for 69.1% of the Canadian total. Late in 1973 Canada Cement Lafarge Ltd. opened a 1.1 million ton-a-year plant at Bath, Ont. and expanded its plant at Havelock, NB by 100,000 tons a year. In addition, Lake Ontario Cement Limited expanded its capacity at Picton, Ont. by adding two roller mills in 1973.

Production of sand and gravel in 1973 was 233.5 million tons valued at \$213.4 million (Table 12.24). Sand and gravel must be quarried, screened, washed, stockpiled and transported in large volumes to compensate for the low unit value received. Transportation and handling often double the plant cost, making it economically desirable to establish plants close to major consuming centres. Urban expansion has greatly accelerated the demand for sand and gravel, but many pits and quarries have been overrun by growing communities. Sand and gravel are used as fill, as granular base course and finish course in highway construction and as aggregate in concrete and asphalt.

Production of stone in 1973 was 91.9 million tons valued at \$127.6 million (Table 12.25). Dimension stone, for use as building and ornamental stone accounts for about 1% of total stone production. Crushed stone for use as aggregate in concrete and asphalt, as railroad ballast and road metal accounts for about 80% and the remainder is used in the metallurgical, chemical and allied industries.

Shipments of clay and clay products in 1973 were valued at \$61.2 million, a 16.4% increase over the previous year (Table 12.26). Deposits of clay for use in the manufacture of papers, refractories, high quality whitewares and stoneware products are scarce in Canada. Consequently china clay (kaolin), fire clay, ball clay and stoneware clay are mostly imported. In Canada common clays and shales, higher in alkalis and lower in alumina than the other clays, are used to manufacture brick and tile products.

12.1.4 Oil and natural gas

Canadian production of crude oil and natural gas liquids increased 15% to 772 million barrels (bbl). Crude oil output, including synthetic crude oil from the Athabasca tar sands amounted to 656 million barrels or 1.8 million barrels a day (b/d) (Table 12.27). Gas plant production of natural gas liquids totalled 116 million bbl or 318,000 b/d. Natural gas production rose 7% in 1973 to 3,119,461 million cubic feet (MMcf) or 8,546 million cubic feet a day (MMcf/d) (Table 12.28).

At the end of 1973 Canada's proven liquid hydrocarbon reserves, which include conventional crude oil and natural gas liquids (propane, butane and pentanes plus), amounted to 9.26 billion bbl. This is comprised of 7.67 billion bbl of crude oil and 1.59 billion bbl of natural gas liquids. At the 1973 annual production level of 754 million bbl, the life index (reserves to production ratio) for conventional crude oil and natural gas liquids dropped for the fourth consecutive year to 12.3 years as production outstripped newly discovered oil by 454 million bbl. Reserves added in 1973 totalled 283 million bbl, and of this amount, 237 million bbl were attributable to revisions, 34 million bbl to extensions of established fields and 12 million bbl to new discoveries. According to the Canadian Petroleum Association (CPA), proved remaining marketable reserves of natural gas declined by about 500 MMMcf (billion cubic feet) to a total of 52.9 MMMcf (trillion cubic feet) in 1973. Using the 1973 level of production, the life index for natural gas dropped to 17 years. In compiling its reserve estimates, the CPA did not take into account recent rises in the wellhead price of natural gas which would produce an upward revision of 4.5 MMMcf by the addition of substantial volumes of gas formerly considered to be beyond economic reach. The estimates of oil and gas reserves do not include any allowance for the recent discoveries in the Mackenzie Delta, the Arctic islands or off-shore areas.

Canadian refinery capacity increased by 127,000 b/d in 1973, due primarily to the addition of the large new refinery at Come By Chance, Nfld. At the end of 1973, crude oil refining capacity of Canada's 41 operating refineries totalled 1,857,300 b/d.

Alberta. Crude oil production in Alberta increased by 21% to 1,484,000 b/d and accounted for 82% of total Canadian crude oil production. Of this amount, synthetic crude oil production

from the Athabasca tar sands contributed 50,500 b/d in 1973. The Alberta Energy Resources Conservation Board (AERCB) estimated that the 1972 adjusted wellhead capacity was 1.63 million b/d which meant that about 72% of the province's capability was being utilized at the end of 1972. Alberta's production capability was almost utilized to capacity in 1973.

Exploratory and development drilling footages increased substantially in Alberta in 1973, partly due to provincial incentive programs but primarily because of substantial increases in field prices for both oil and gas. Drilling statistics show that development drilling increased 36% to 6.73 million ft and exploratory drilling increased 16% to 5.97 million ft. Despite the increased efforts, no large oil discoveries were made in 1973.

The shallow gas-bearing formations of southern Alberta continued to be the principal target for explorers in the province and several discoveries were recorded in that area. The drilling program to evaluate the British Block, which was formerly reserved for military training, got under way late in 1973. Evaluation of the 8,000-square-mile area is being conducted by a provincially funded drilling program under the direction of the Suffield Evaluation Committee of the Alberta government. By 1973, 53 successful gas wells had been drilled out of an ultimate planned total of 78. The Block, which is almost completely surrounded by gas-producing fields, is estimated to contain about 4 MMMMcf of gas reserves.

According to an appraisal of Alberta's oil sands completed in 1973 by the Alberta Energy Resources Conservation Board (AERCB), there is an ultimate in place reserve of crude bitumen of 1,000 billion bbl of which 250 billion bbl are recoverable by known methods of technology. The bulk of the recoverable reserves are located in the Athabasca deposit with the remainder distributed between the Cold Lake, Peace River, Wabasca and Buffalo Head Hills deposits. Of the 250 billion bbl of recoverable synthetic crude oil, only 26.5 billion bbl are amenable to open-cast mining methods and all of this is located in the Athabasca deposit. The remaining 223.5 billion bbl are expected to be eventually recovered by in situ recovery techniques which are still in the experimental stage of development. At the present time there are two firm proposals for major open-cast bituminous sands projects in Alberta. These are the Syncrude Canada Ltd.'s proposal which received final approval from the Alberta government in September 1973, and Shell Canada Limited's project on which final approval is still pending. Construction on the proposed 125,000 b/d Syncrude project was scheduled to commence in 1974 and be completed by 1978.

Saskatchewan. Saskatchewan's crude oil production declined by 1,800 b/d to 235,000 b/d in 1973, accounting for 13% of the Canadian total. Marketable natural gas production, at 65.9 MMMcf accounted for 2.1% of total Canadian production. Total footage drilled in Saskatchewan amounted to 1.75 million ft compared with 1.81 million in 1972. There were no significant oil or gas discoveries made in Saskatchewan during 1973.

British Columbia. In 1973 production of crude oil in British Columbia declined by 7,000 b/d to 58,000 b/d and represented 4% of total national production. Despite a substantial reduction in production at the Beaver River gas field, one of the province's major producing fields, net withdrawals of natural gas increased by 17% to 506 MMMcf, or 16% of total domestic production.

Both exploratory and development drilling decreased in 1973. Exploratory drilling at 566,500 ft declined by 134,463 ft from the previous year and development drilling declined by 140,566 ft to 301,421 ft. There were no significant oil discoveries made in 1973 but several significant gas discoveries were recorded, four of which may eventually prove to be major fields. These discoveries were made in the Grizzly Valley area, the Cecil Lake area, the Kotcho Lake area and Nelson Forks area, all in northeastern British Columbia.

Manitoba. Production of crude oil in Manitoba amounted to 14,000 b/d in 1973, down slightly from 1972. All fields in Manitoba are producing at maximum capability. There is no natural gas production in Manitoba. Because of a 25-well exploratory program by Asamara Oil Corporation Ltd., 16 wells were completed in 1973 compared to six in 1972. No commercial successes were recorded.

Yukon Territory, Northwest Territories and Arctic islands. Crude oil production north of the 60th parallel is confined to the Norman Wells field in the Northwest Territories. Oil from this field is processed in a small local refinery which serves local markets. Natural gas

production declined substantially to 276 MMcf in 1973, because of a substantial reduction in production from the Pointed Mountain field, the principal producing gas field in the Northwest Territories.

There were 101 wells drilled in northern Canada in 1973 for a total footage of 741,217 ft compared with 71 wells and 574,102 ft in 1972. All but six of these wells were classed as exploratory. Of the 95 exploratory wells drilled, seven were classified as potential gas finds, five being located in the Mackenzie Delta and the remainder in the Arctic islands. One oil discovery was drilled in the Mackenzie Delta in 1973. Some of these discoveries have subsequently been proven to be major discoveries. Late in 1973, the search for oil and gas was expanded to the off-shore areas from both the Mackenzie Delta and the Arctic islands. Off-shore from the Delta, drilling is now being conducted from man-made islands in the Beaufort Sea and at least one significant oil and gas discovery had been recorded there by year-end. In the Arctic islands, a successful step-out well was drilled eight miles from shore in 400 ft of water from a floating ice platform. This well substantially enlarged previous estimates of the size of the Hecla field on the east coast of Melville Island. The well is important from a technological as well as commercial point of view as it ushered in another major breakthrough in Arctic exploratory drilling technology.

Eastern Canada. Aggregate drilling in Ontario declined in 1973 by 6% to 219,808 ft. Exploratory drilling accounted for 46% of the total, down 35% from the previous year. No noteworthy discoveries were made. In the Gulf of St. Lawrence, two deep exploratory wells were drilled in 1973 and both were dry and abandoned.

Off-shore from the east coast, 30 wells were drilled for a total of 331,448 ft in 1973, compared with 18 wells and 191,210 ft in 1972. Drilling commenced in this region in 1966 and since then a total of 68 wells had been drilled of which four significant discoveries of oil and gas have been made. All of these were drilled in the vicinity of Sable Island. Seven offset wells were drilled around the first discovery well on Sable Island and six of these were successful, but with considerably reduced pay sections from the initial discovery. The results of this drilling suggest that it would be most difficult to develop this field on a commercial basis. Elsewhere off the east coast, the Bjarni H-81 well drilled on the Labrador Shelf penetrated a thick gas-bearing sandstone formation and the results of preliminary tests indicate that this might be the first major discovery in the off-shore east region.

12.2 Government aid to the mineral industry

12.2.1 Federal government aid

Federal assistance to the mining industry takes the form of the provision of detailed geological, geophysical, topographical, geodetic, geographical and marine data which are of fundamental importance to the discovery and development of the mineral resources of Canada; the provision, through laboratory and pilot-plant research, of technical information concerning the processing of ores, industrial minerals and fuels on a commercial scale; certain tax incentives; and financial and technical assistance to the gold-mining industry under the Emergency Gold Mining Assistance Act.

The Department of Energy, Mines and Resources. The federal Department of Energy, Mines and Resources was created by the Government Organization Act on October 1, 1966 (RSC 1970, c.E-6). Apart from its administrative establishments, the Department is made up of three Sectors — Science and Technology, Mineral Development and Energy Development — each headed by an Assistant Deputy Minister and each aiding the Canadian mineral industry according to its assigned responsibility.

The Science and Technology Sector contains the Canada Centre for Mineral and Energy Technology (the former Mines Branch), the Geological Survey of Canada, the Surveys and Mapping Branch, the Earth Physics Branch, the Polar Continental Shelf Project, the Canada Centre for Remote Sensing, and the Explosives Division.

The Canada Centre for Mineral and Energy Technology consists of a large laboratory and pilot-plant complex and conducts research into methods of extracting and processing minerals and fuels. Emphasis is placed on recovery techniques for ores and minerals with low-grade impurities or complex mineral composition. Fuels research includes a comprehensive

evaluation of the quality of Canada's fossil fuels and the development of refining methods for the low-grade, high-sulphur petroleum of the Athabasca oil sands. Mining research is aimed at maximizing ore production with minimum physical hazard and at minimum cost. A five-year project will greatly lower waste rock production and costs by improving the design of the walls of open-pit mines. Research is also being conducted on coal beneficiation and carbonization. In the related area of pyrometallurgy, the extraction of metal by heat, applied research is concentrated on the development of a shaft electric furnace for smelting iron ore. In the mineral sciences, the Canada Centre for Mineral and Energy Technology carries out physical, chemical, crystallographic and magnetic studies to determine mineral characteristics important to extraction and processing methods. The Canada Centre for Mineral and Energy Technology also produces standard reference ores and metals needed by mining and metallurgical companies. In metals research, in addition to improving traditional techniques for metal forming, attention is focused on ensuring the structural soundness of metal pipelines for use in the Arctic. Another program is directed toward the development of methods of mineral recovery that will reduce pollution problems. Research is conducted on the development of chemical methods of ore processing that avoid the sulphur dioxide production of the smelting process and the conversion of mineral waste into useful materials such as fillers and ceramics.

The Canada Centre for Mineral and Energy Technology is assisted in its work by the National Advisory Committee on Mining and Metallurgical Research, comprising senior executives and researchers from industry, government and universities.

The Geological Survey of Canada maps and studies the geology of Canada. It is the major organization engaged in this work in Canada and its studies extend to all provinces and territories. Its activities are designed to support two programs of the federal Department of Energy, Mines and Resources: the Mineral and Energy Resources Program and the Earth Sciences Program. A principal aim of the former is to ascertain the mineral and energy resource potential available to Canada and thus the Survey expends considerable effort in such fields as estimating the potential abundance and probable distribution of mineral and fuel resources. This is done by providing the necessary systematic geological framework, by defining those settings favourable to the occurrence of the various types of mineral commodities and fuels and by comparing these, by appraising foreign mineral and fuel resources and by other studies. The Earth Sciences Program includes activities designed to assist in effective use and conservation of resources and in the management and preservation of man's environment throughout Canada. To assist in this, the Geological Survey provides geologically based information on land resources and terrain performance, which is derived from geological, geomorphic, geophysical, geotechnical and related studies of earth and rock materials, land forms and associated dynamic processes.

In support of these activities, the Survey each year sends about 100 parties into various parts of Canada. The results of its studies are published in memoirs, bulletins, papers, maps and numerous scientific technical journals. Headquarters is in Ottawa but there are several regional offices of which the Institute of Sedimentary and Petroleum Geology in Calgary and the Atlantic Geoscience Centre at Dartmouth are the largest. The former studies the geology of Canada's western and northern sedimentary basins and the latter investigates the bottom morphology and structure of the continental shelves and the floors of the open ocean. A smaller contingent of geologists on the west coast is developing similar marine-geology studies in that area.

The Earth Physics Branch carries out much geophysical work of interest to the mineral industry. It studies, collects and publishes, in the form of maps and charts, information on the geomagnetic field in Canada. Most of the information published is obtained from airborne geomagnetic surveys, which have ranged over the whole of Canada and across the Atlantic to Scandinavia. In addition, the Branch maintains a network of 10 permanent geomagnetic observatories, as well as temporary observatories in summer at many widely distributed sites. It also operates a network of 31 seismic stations to assist in the study of the earth's interior and to obtain data for its quantitative assessment of seismic risk throughout Canada. In gravity research, another means of studying the composition of the earth's crust, the Branch is systematically mapping variations in the earth's gravity on a regional basis throughout Canada, including the Arctic and the floors of the Gulf of St. Lawrence and Hudson Bay. The results of all gravity measurements are available in a new gravity map of Canada on a scale of

1:5,000,000 or about 80 miles to the inch, for easy comparison with the new geological and tectonic maps of Canada on a similar scale. Geothermal studies in mines and deep boreholes provide information to the mineral industry on the underground thermal regime, including permafrost.

No mineral development is possible without accurate, large-scale topographical maps. The Surveys and Mapping Branch, in conjunction with the Mapping and Charting Establishment of the Department of National Defence, has completed the topographical mapping of the country at the medium scale of 1:250,000, or about four miles to the inch. About 40% of the larger-scale mapping at 1:50,000 has been completed in the more settled areas and areas of greater economic importance. Also available for selected areas are maps at scales of 1:25,000; 1:125,000 and 1:500,000. Another important Branch function is the establishment of a basic network of survey control points across Canada that provide precise figures of latitude, longitude and elevation above sea level. In addition to its topographic maps, the Branch produces various multicoloured maps for other government agencies, aeronautical charts and the National Atlas of Canada, which describes Canada's physical, economic and social geography. The National Air Photo Library, operated by the Branch, has on file over 4 million aerial photographs of Canada, taken over the last half-century from aircraft flying at various heights and more recently from the Earth Resources Technology Satellite (ERTS) and Skylab, in black and white and in colour.

The Explosives Division is responsible for the administration of the Federal Explosives Act, which is primarily an Act of public safety to control the manufacture, authorization, storage, sale, importation and transportation by road of explosives.

The Mineral Development Sector is responsible for resource-economic research, program development and policy formulation in the field of non-renewable resources. It conducts fundamental and applied resource-engineering-economic research and field investigations into non-renewable resource problems, policies and programs on a commodity or total industry basis, in a regional, national and international context. The work covers all aspects of the mineral industry from resources through exploration, development, production, processing, transportation and consumption. On the basis of this work, the Sector publishes resource-engineering-economic reports and advises government departments and agencies on non-renewable resource policy matters. Current activities include regional studies of the mineral economy of a number of areas in Canada; assessment of mineral projects in various parts of Canada for which federal support has been requested; mineral resource and mineral reserve studies in a number of mineral commodities and the safeguarding of Canadian mineral interests through participation in international agencies such as the United Nations Lead-Zinc Study Group, the Economic Commission for Europe, the Committee on Natural Resources on the Economic and Social Council, and the International Tin Council. The Sector administers the Emergency Gold Mining Assistance Act as a means of aiding mining communities largely dependent upon the gold mines. In collaboration with the Canadian International Development Agency and with the support of industry, the Sector sets up training courses for mineral scientists, technologists and economists brought to Canada under various aid programs, and advises on mineral projects undertaken by Canada as an aid to developing countries. The Sector publishes an extensive series of reports and other material, and maintains the National Mineral Inventory, which is a listing of about 16,000 mineral showings and deposits in Canada that may be consulted by anyone interested.

The Energy Development Sector is primarily a policy-making group with a direct impact on the mining industry. Some specific areas of assistance are considered here. The Sector studies and assesses individual projects and developments relative to each of the energy sources and in terms of interrelationships with other energy sources. It appraises trends in oil and gas exploration and production, transportation, processing and marketing in Canada and on an international scale, and provides information to federal government agencies, industry and the general public on oil and gas developments in Canada and abroad. In the field of uranium, the Sector continues to co-ordinate uranium matters on such subjects as stockpile programs, possibilities of the establishment of uranium-enrichment facilities in Canada and export opportunities. With respect to coal, in addition to its wider role it provides assistance in the form of research and development grants to help improve the quality and utilization of coal, and provides advice on production expansion rates compatible with profitability and

projected demand in Canadian and foreign markets. The Sector also administers and manages federal interests in mineral resources off-shore from Canada's east and west coasts and in the Hudson Bay region, as well as federally owned mineral rights in the provinces that become available for disposition.

Tax incentives to the mineral industry. Although mineral industry enterprises are subject to federal income tax, certain benefits granted to them under the Income Tax Act serve as incentives to exploration and development of minerals and to further processing of minerals. Some modifications were made in the tax incentives to the mineral industry in the amended Income Tax Act which became effective on January 1, 1972.

Under the provisions of the amended Act the exemption from income tax for the first three years of operation of new mining ventures terminated at the end of 1973. However initial capital expenditures in a new mining operation on buildings, machinery and equipment and certain community and transportation facilities may be deducted as rapidly as income will permit. Consequently new mining ventures will not be liable for federal income tax until these initial capital expenditures have been recovered. In the case of a major expansion of an existing mine, capital expenditures on buildings and on machinery and equipment also may be deducted immediately.

The tax reform effected on January 1, 1972 was further modified by the federal Budget of November 18, 1974. To offset the new or greater royalties and increased mining taxes imposed by various provinces, the Government of Canada eliminated royalties, rentals, fees and mining taxes as deductions for income tax purposes. Simultaneously, the federal income tax rate for the mining industry was reduced to 25% to partially compensate for the non-deductibility of royalties and mining taxes. This decrease of about 15 percentage points from the normal federal rate of income taxation is commonly referred to as the "mining tax abatement".

The operators of oil or gas wells or mines have been able to claim, during the full life of the operation, an automatic depletion allowance equal to one third of the taxable income. In general the effect of the automatic percentage depletion allowance is to reduce the tax otherwise payable by one third. By the November 18, 1974 Budget proposals, this will be replaced by an earned depletion allowance which may be deducted annually at the rate of 25%, formerly one third, of production profits, but the total deduction may not exceed the unclaimed balance of earned depletion remaining in the pool. The depletion base will amount to \$1 for every \$3 of expenditures on exploration and development activities, on certain assets acquired for a new mine or major expansion and on facilities acquired to process, up to the prime metal stage, Canadian ores which were previously exported unprocessed. Depletion may be earned on eligible expenditures between November 7, 1969 and May 6, 1974 inclusive, and accumulated for deduction after May 6, 1974. During this period the automatic percentage depletion allowance was available. Eligible expenditures made after May 6, 1974 will continue to earn depletion. The Income Tax Act was amended in 1973 to render income to custom processors from the processing of mineral ores up to the prime metal stage eligible for the automatic depletion allowance from January 1, 1973. Moreover, expenditures on machinery and processing equipment acquired after May 8, 1972 will earn depletion for deduction after 1976.

Mining and petroleum companies will continue to have the right to claim costs of exploration and development incurred in the search for oil, gas or minerals in Canada as an immediate deduction from income from all sources. The cost of mineral properties will be classified as exploration expenses and will be immediately deductible, but this cost will not earn depletion. Revenue from the sale of mineral properties will be treated as income.

Prospectors and their financial backers are no longer exempt from income tax on receipts from the sale of a mining property but receipts in the form of shares will be classified as a capital gain upon sale of the shares. Only one half of a capital gain is subjected to income tax. The tax liability of the prospector upon the sale of the shares may be further reduced through purchase of a forward-averaging annuity contract. Amendments to the Act in 1973 provided that all individual taxpayers (including prospectors and grubstakers) may also invest, in a forward-averaging annuity contract, the proceeds in the form of money from the sale of resource properties after January 1, 1973. The benefit to the prospector lies in the fact that the total tax on the annual receipts from an annuity for two or more years will usually be less than

if the proceeds are included in income in one year. Prospectors may deduct exploration costs from other income at the rate of 20% annually.

Emergency Gold Mining Assistance Act. Under this Act, which came into force in 1948 (RSC 1970, c.E-5), financial assistance was provided to marginal gold mines to counteract the effects of increasing costs of production coupled with a fixed price for gold. By enabling gold mines to extend their productive life, the subventions helped communities dependent on gold mining to adjust gradually to diminishing support. In 1973 the Act was amended and its application extended to June 30, 1976.

The amount of assistance payable to an operator is determined by a formula and is based on the average cost of production per ounce and the number of ounces produced; it ranges from zero to \$10.27 an oz t. Gold mines having a cost of production of \$26.50 or less an oz t receive no assistance and those having a cost of production of \$45 or more an oz t receive the maximum rate of \$10.27 an oz t.

The open market price of gold began to rise in 1971, and further increases have occurred since then. The higher prices made it more profitable for gold mine operators to sell their gold on the open market than to sell to the Royal Canadian Mint, which is necessary to be eligible for assistance payments. The Mint buying price was US\$35 an oz t until May 1972 when it was raised to US\$38. The Mint buying price was further increased to \$42.22 in October 1973. No applications for assistance under the Act have been received on gold produced since December 31, 1971.

12.2.2 Provincial government aid

Newfoundland. The Newfoundland government, through the Mineral Development Division of the Department of Mines and Energy, provides several valuable services to those interested or involved in exploration and mining, including: a continuing program of mineral assessment designed to encourage development of the mineral resources of the province; inspection of exploration work carried out on concession areas and examination of mining operations; administration of beaches (control of removal of sand and gravel as a conservation measure) and collection of data relevant to the control of sand removal; identification of mineral rock specimens submitted by the public and examination of corresponding occurrences where warranted; technical advice dispensed to those who seek such service (i.e. in hydrological problems and on the availability of quarriable peat moss to be removed by permit); co-operation with the Geological Survey of Canada and other federal government agencies; and preparation and publication of data useful for educational and general informational purposes, including the preparation of mineral and rock sample sets. Geological reports, geophysical maps and compilations of general data pertaining to specific areas are procurable at nominal cost and other information from unclassified files is made available to interested parties. Prospectors' or miners' permits are issued by the Division and mining claims are recorded.

Nova Scotia. Under the provisions of the Mines Act (RSNS 1967, c.185), the government of Nova Scotia may assist a mining company or operator in the sinking of shafts, slopes, deeps and winzes and the driving of adits, tunnels, crosscuts, raises and levels. This assistance may take the form of work performed under contract, the payment of bills for materials and labour, or the guarantee of bank loans. Any such work must be approved by the Department of Mines. Mining machinery and equipment to be used in searching for or testing and mining of minerals may be made available through the government. Such equipment is under the direct supervision of the Chief Mining Engineer.

New Brunswick. The Mineral Resources Branch administers the disposition of Crown mineral rights including the issuing of prospecting licences, recording of mining claims, issuing of mining licences and leases and other matters pertaining thereto. Detailed and index claim maps are prepared for distribution. The Branch is responsible for general and detailed geological mapping and investigations. Maps and reports are prepared for distribution, mineral and rock specimens are examined for prospectors and preliminary examinations of mineral prospects are made when requested and circumstances warrant. The Branch administers the safety regulations governing operations under the Mining Act. All mines are regularly inspected, laboratory facilities are maintained and certain equipment used in mines must be

approved. The Branch is responsible also for the collection of mining taxes and royalties and the preparation of statistics on mineral production. A regional office, located at Bathurst and staffed by geologists and inspectors, serves as a recording office for northeastern New Brunswick, and another at Sussex, staffed by a senior geologist, conducts regional work and assists exploration companies and prospectors working in the southern area. Claim maps and topographical, geological and aeromagnetic maps are available for perusal and distribution.

Quebec. The Mines Branch of the Department of Natural Resources is responsible for implementing the Mining Act (SQ 1965, c.34) and the Mining Duties Act (SQ 1965, c.35). The Branch incorporates the following three directorates: Geology, Mining Domain and Mineral Economics and Development. The Geology Directorate consists of six services: Geological Exploration, Mineral Deposits, Geotechnics, Technical Documentation, Cartography and Technical Revision. The Directorate is responsible for the geological study of the province with the aim of promoting the development of its mineral resources. As a result of field trips undertaken each year, the Directorate produces detailed reports on various areas, and geoscientific maps. The Geotechnics Service deals with problems pertinent to the development of particular environments by investigating the geological setting of the concerned areas.

The Mining Domain Directorate includes the Mining Titles Service, the Mines Inspection Service, the Engineering Service and the Mining Conflicts Division. The Directorate controls the mining rights granted on Crown lands. Its work covers the registration of mining claims and the issuing of development permits or other special permits governing the sale or rental of lands for mining purposes. Furthermore, it sees to it that holders of mining rights carry out whatever development work is prescribed for the rights they hold. Mine inspectors verify that working conditions in mines, quarries and mills conform to the safety standards prescribed by law or regulation. The Mining Domain Directorate is also responsible for preparing and carrying out whatever engineering work is required to open up new mining areas or operations, including the building of access roads, construction of mining townsites and for any regulations pertaining to the use of the land in question. The Mining Conflicts Division is responsible for verifying the existence or validity of claims in accordance with Part VI of the Mining Act.

The Mineral Economics and Development Directorate is concerned with the optimum use of Quebec's mineral resources through development and conservation. Three services are now being organized: Projects, Economic Evaluation and Promotion. The Directorate aims to identify and promote projects that lend themselves to quick and tangible results in the development of Quebec's mineral resources. It will carry out, or have carried out, studies on marketing, financing, transportation, development and exploitation techniques, profitability and any other essential parameter affecting the development of mineral resources.

Ontario. The objective of the Mines Division of the Ontario Ministry of Natural Resources is to provide an optimum continuous contribution to the economy of Ontario by stimulating and regulating the utilization of available supplies of minerals by resource products industries. The Mines Division is composed of four branches in Head Office: the Mineral Resources Branch, the Geological Branch, the Mines Engineering Branch and the Mineral Research Branch.

The objective of the Mineral Resources Branch is to ensure the orderly development and utilization of provincial non-renewable resources. It is essentially a strategic planning group composed of four sections: Industrial Minerals (including the administration of the Pits and Quarries Control Act), Metallic Minerals, Petroleum Resources and Commodity Analysis.

The Geological Branch's objectives are to encourage an optimum level of exploration activity and rate of mineral discovery through geological, geophysical and geochemical surveys of the province, the publication of maps and reports on mineral occurrences in Ontario and the education of prospectors and others in mineral exploration. Assessment work files are administered by this Branch. It is also responsible for the administration of the Mineral Exploration Assistance Program, a program designed to stimulate exploration in the Red Lake, Geraldton-Beardmore, Kirkland Lake and Cobalt areas. One third of the cost of exploration to a maximum of \$33,000 is provided to small- and medium-sized companies to explore in these areas.

The Mineral Research Branch is composed of the Assay Laboratory in Toronto and the Temiskaming Testing Laboratory in Cobalt. The Assay Laboratory provides assay and analytical services and conducts mineralogical investigations to aid in the discovery and

development of mineral deposits. Its services are available to the mining industry and public at large. The Temiskaming Testing Laboratory situated at Cobalt operates a bulk sampling and assay laboratory to assist the producers of the area in marketing their silver-cobalt ores.

The Mines Engineering Branch administers Part IX of The Mining Act which calls for regular examination of all operating mines, quarries, sand and gravel pits and certain metallurgical works with a view to ensuring the health and safety of employees as well as the public. Regional geologists and mines engineers provide advice or support to the line organization of the Ministry. The Lands Administration and Surveys and Mapping Branches of the Lands Division handle matters dealing with the recording of mining claims, assessment work, etc. and the preparation of title to mining lands.

Manitoba. The Mineral Resources Division of the Manitoba Department of Mines, Resources and Environmental Management offers the following services: recording the staking and acquisition of Crown mineral rights and other relative material associated with minerals, compiling assessment information and inspecting mineral rights dispositions; compiling geological data pertinent to mineral occurrences, issuing reports and maps covering geological and geochemical surveys, operating an analytical and assay laboratory to assist prospectors and geologists in the evaluation of mineral occurrences and the classification of rocks and minerals; giving engineering approval of mining works and inspecting mining operations regarding the health and safety of employees, controlling in-plant environmental and safety regulations related to mining and quarrying operations, training mine rescue crews and inspecting mine rescue facilities; inspecting oil well drilling sites, abandonment and reworking and maintaining records of each operation. Manitoba's new Mineral Disposition Regulation, effective January 1, 1975, provides for provincial participation in mineral exploration and development.

Saskatchewan. The Mineral Lands Branch of the Department of Mineral Resources is responsible for the disposition of all Crown minerals, administers incentive programs to attract the mineral industry, and maintains records respecting areas let out by lease, permit, drilling reservation, claim or claim block. Recording offices, located at Regina, La Ronge, Uranium City and Creighton, assist the public in determining the lands available and accept applications.

Officers of the Mines Safety Branch of the Department of Labour under the authority of The Mines Regulation Act, make regular examinations of all mines to ensure proper conditions for the health and safety of the men employed. Safety education, particularly in the form of first aid and mine rescue instruction, is also part of the work of this Branch. All Branch officers are stationed at the Regina headquarters.

The Precambrian Geology Division of the Geological Sciences Branch conducts geological surveys in the Shield areas of the province and publishes maps and reports for the information and guidance of the industry. Resident geologists are stationed at Uranium City and La Ronge, which have core storage and examination facilities. The Division processes exploration data and assessment work to be made available for inspection by the industry.

Saskatchewan recently brought in legislation to permit Crown participation in the potash industry.

Alberta. The Energy Resources Conservation Act, proclaimed January 1, 1972, provided for the transfer to the Energy Resources Conservation Board of responsibility for the administration of The Pipe Line Act, The Coal Mines Regulation Act and The Quarries Regulation Act. This transfer brings under one administrative authority all aspects of the energy resources of Alberta including their conservation, regulation and transmission. The Board regulates coal mines and quarries and maintains standards of safety by inspection and certification of workers. The oil and gas industries are served in a similar way, but regulatory measures are also concerned with preventing the waste of oil and gas resources and with giving each owner of oil and gas rights the opportunity of obtaining a fair share of production. The Board compiles periodic reports and annual records which are of invaluable assistance in oil development in Alberta. The Workmen's Compensation Board also maintains safety standards and pays the cost of training mine rescue crews.

The mining industry is also served by the Research Council of Alberta which has made geological surveys of most of the province and has carried out projects concerned with the uses and development of minerals. The Council has studied the occurrence, uses and analyses of Alberta coals and their particular chemical and physical properties, the use of coals in the generation of power, and the upgrading and cleaning of coal; and has also studied briquetting, blending, abrasion loss, shatter and crushing strength, asphalt binders and dust-proofing of coal. Studies have been made of glass sands, salt, fertilizers, cement manufacture and brick and tile manufacture.

The province from time to time has had commissions examine various aspects of the mining industry when it has considered that their findings would be of assistance in developing such industries. The province, together with the Canadian Association of Oil Well Drilling Contractors and the Canadian Petroleum Association, maintains a detailed supervisory and safety training program concerned with the drilling of oil and gas wells. Of assistance also to mining companies and oil companies are the special reductions provided for in the Alberta Income Tax Act. These follow the parallel provisions in the federal Income Tax Act.

British Columbia. The British Columbia Department of Mines and Petroleum Resources provides assistance to the mining industry through two established branches and two new divisions, Economics and Planning, and Mineral Taxation.

Inspectors of the Mineral Resources Branch are stationed at various centres throughout the province. In addition to inspecting coal mines, metal mines and quarries, they may also examine prospects, mining properties, roads and trails, and carry out special investigations under the Mineral Act. Environmental Control inspectors conduct dust, ventilation and noise surveys at all mines and quarries and recommend improvements in environmental conditions. Other inspectors administer the Roads and Trails and Prospectors Grub-stake programs, and the reclamation sections of provincial mining statutes.

The Geological Division carries out a variety of geological studies and publishes data concerning mineral deposits. It makes assessments of the mineral potential of land, collects, stores and disseminates geological statistical data, and records the exploration and mining activities of the industry. An inventory of mineral deposits is under way with a view to establishing a quantitative appraisal of mineral resources. The Division offers a restricted number of free assays for prospectors, identifies rocks and minerals, and provides lectures for courses in prospecting. The Mining Titles Division administers provincial laws on the acquisition of rights to minerals and coal. It provides information, including approximate-site maps, on mineral claims and placer leases and their ownership as well as data on the ownership, location and status of coal licences and coal leases.

The Petroleum Resources Branch is responsible for administering the Petroleum and Natural Gas Act and related drilling and production regulations. These regulations stipulate efficient and safe practices to be used in the drilling, completion and abandonment of wells, provide for the orderly development of fields, and for the conservation and prevention of waste of oil and natural gas within the reservoir and during production operations. Every well location must be approved by the Branch before drilling begins. All drilling and production operations are inspected frequently to ensure full compliance with regulations which govern such features as facilities and practices used, adequate plugging of abandoned wells, surface restoration of well sites, procedures for well-testing and measurement, disposal of produced water, fire protection and general conservation. Complaints of property damage resulting from drilling and producing operations and from geophysical work programs are investigated. Comprehensive records of all drilling and producing operations are maintained and are published or made available for study by anyone interested in oil or gas development in the province. Samples of bit cuttings as well as all core from every well drilled are retained for study. Detailed reservoir engineering and geological studies are carried out on the basis of technical information submitted from operating companies, as well as on information acquired through field work. Estimates of reserves of oil and natural gas are made annually. Crown owned oil and natural gas rights are evaluated prior to being disposed of by public tender.

British Columbia has made provision for Crown participation in future mineral development and was the first Canadian province to adopt the use of the metric system for staking, effective March 1, 1975.

12.3 Mining and petroleum legislation

12.3.1 Federal and departmental jurisdictions

Mineral rights vested in the Crown in right of Canada include those situated in the Yukon and Northwest Territories and off-shore within the limits of Canada's continental margins, as well as those underlying certain federally owned lands within the provinces.

The Supreme Court of Canada in its Opinion of November 1967 stated that, as between Canada and the province of British Columbia, Canada has proprietary rights in and legislative jurisdiction over "lands, including the mineral and other natural resources, of the seabed and subsoil seaward from the ordinary low-water mark on the coast of the mainland and the several islands of British Columbia, outside the harbours, bays, estuaries and other similar inland waters, to the outer limit of the territorial sea of Canada, as defined in the Territorial Sea and Fishing Zones Act. . .". The Court also stated that the federal government has legislative jurisdiction "in respect of the mineral and other natural resources of the seabed and subsoil beyond that part of the territorial sea of Canada. . . to a depth of 200 metres or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the mineral and other natural resources of the said areas. . .".

The Department of Energy, Mines and Resources, through the Resource Management and Conservation Branch, is responsible for administration and enforcement of legislation and regulations relating to mineral resources off Canada's east and west coasts and in the Hudson Bay and Hudson Strait regions, as well as with respect to federally owned mineral rights that become available for development in the provinces. The Department of Indian Affairs and Northern Development, through the Northern Natural Resources and Environment Branch, is similarly responsible for mineral rights in the Yukon Territory and Northwest Territories and underlying Canada's high-Arctic off-shore regions.

Mineral rights of Indian reserves in the provinces are also vested in the Crown in the right of Canada and are administered by the Indian-Eskimo Economic Development Branch of the Department of Indian Affairs and Northern Development in consultation with the Indian band councils. The rights to a reserve may be taken up only after the Indian band has given approval for development through a referendum vote. The minerals are then administered under the Indian Oil and Gas Regulations or the Indian Mining Regulations, except in British Columbia where mining rights must be acquired under provincial statutes and the BC Indian Reserves Mineral Resources Agreement of 1943. The Indian Oil and Gas Regulations provide for disposal of rights by public tender in the form of permit or lease parcels. The Indian Mining Regulations, on the other hand, provide for disposal based on terms negotiated with the Indian band council. The Indian councils are thus assuming a greater share of responsibility in the management of their mineral resources. Officers of the Department of Indian Affairs and Northern Development are advisers to the Indian councils on mineral matters and are responsible for the administration and enforcement of relevant regulations.

12.3.2 Federal mining laws and regulations

Mining exploration is carried out in the Yukon Territory in accordance with the provisions of the Yukon Quartz Mining Act and the Yukon Placer Mining Act; in the Northwest Territories, including Arctic coastal waters, operations are governed by the Canada Mining Regulations 1961, as amended. There are also the Territorial Dredging Regulations, Territorial Coal Regulations and Territorial Quarrying Regulations common to both territories. In the Yukon Territory, mining rights may be acquired by staking claims under the appropriate acts and regulations. A one-year lease may be obtained to prospect for the purposes of placer mining, renewable for two additional periods of one year each; a 21-year lease, renewable for a like period, may be obtained under the Yukon Quartz Mining Act.

Under the Canada Mining Regulations, a prospector's licence is required. Staked claims must be converted to lease or relinquished within 10 years. In certain areas, a system of exploration by permit over large areas is allowed. Any individual over 18 years of age or any joint-stock company incorporated or licensed to do business in Canada may hold a prospector's licence. No lease will be granted to an individual unless the Minister of the department involved is satisfied that the applicant is a Canadian citizen and will be the beneficial owner of the interest acquired under such lease; no lease will be granted to a corporation unless such corporation is incorporated in Canada and unless the Minister is satisfied that at least 50% of

the issued shares of the corporation are owned by Canadian citizens or that the shares of the corporation are listed on a recognized Canadian stock exchange and that Canadians will have the opportunity of participating in the financing and ownership of the corporation. Any new mine beginning production after the Canada Mining Regulations came into force in 1961 will not be required to pay royalties for 36 months, starting from the day the mine comes into production.

An exploration assistance fund for petroleum and other minerals in the Yukon and Northwest Territories was established by the federal government in 1966. Assistance to a single applicant for one or more exploration programs is limited in aggregate to \$50,000, but not exceeding 40% of the approved cost of an exploration program. Assistance is available only to Canadian citizens or companies incorporated in Canada. Named the Northern Mineral Exploration Program, it is designed to encourage investment from additional Canadian sources previously not attracted to investment in northern exploration operations.

12.3.3 Oil and gas legislation

Oil and gas exploration and development in the Yukon and Northwest Territories and Canadian off-shore areas are governed by the Territorial Lands Act, the Public Lands Grants Act, the Oil and Gas Production and Conservation Act and regulations pursuant thereto.

An oil and gas exploration permit may be granted for three, four or six years, depending upon latitude and region, either upon application or, in respect of land previously held under permit, by sale through public tender. A permit is renewable for up to six one-year periods, with provisions that the appropriate Minister may grant additional renewals under special terms and conditions. The permittee is obligated to undertake exploratory work in an amount no less than five cents an acre for the first 18 to 36 months increasing to 15 to 20 cents an acre for subsequent periods of the primary term. Work obligations for each one-year renewal period increase up to 50 cents an acre. The permittee must post a guarantee deposit in the form of cash, bonds, or promissory notes prior to each work period. These deposits are returned upon receipt of satisfactory evidence that exploratory work has been performed, and are forfeited to the Crown in the event the permittee fails to fulfil the work obligations. Oil and gas leases may be selected in accordance with prescribed guidelines for up to 50% of a permit area, with that portion not converted to lease reverting to the Crown.

An oil and gas exploration permit may be issued to any individual over 21 years of age or to any joint-stock company incorporated or licensed to do business in Canada, or incorporated in any province of Canada. Extraterritorial companies applying for permits in the Northwest Territories must be registered under the Companies Ordinance of the Northwest Territories. An oil and gas lease may be granted to a permittee where the Minister of the department involved is satisfied that the applicant is a Canadian citizen over 21 years of age and will be the beneficial owner of the interest granted, or to a corporation where such corporation is incorporated in Canada, and the Minister is satisfied that at least 50% of the issued shares of the corporation are beneficially owned by Canadian citizens or that the shares of the corporation are listed on a recognized Canadian stock exchange and that Canadians will have an opportunity of participating in the financing and ownership of the corporation, or the operation is wholly owned by a corporation that meets either of these two corporate requirements.

The Oil and Gas Production and Conservation Act provides for comprehensive control over all oil and gas operations in the territories and off-shore regions including such matters as safety, the prevention of waste and pollution, production, conservation, storage, transmission, and unitization of oil and gas fields. An Oil and Gas Committee of five members appointed by the Governor in Council is empowered to hold inquiries, to hear appeals, and to make orders in connection therewith.

Federally owned mineral rights within the provinces that are available for development (except those in Indian lands) are administered by the Department of Energy, Mines and Resources under regulations promulgated pursuant to the Public Lands Grants Act.

12.3.4 Provincial mining laws and regulations

In general, all Crown mineral lands lying within the boundaries of the several provinces (with the exception of those within Indian reserves, national parks and other lands which are under the jurisdiction of the federal government) are administered by the respective provincial

governments. The exception is Quebec where all mineral rights except those granted with lands conceded to individuals prior to July 24, 1880 are administered by the province; also, mining rights on federal lands in Quebec are administered by the province.

The granting of land in any province except Ontario no longer automatically carries with it mining rights upon or under such land. In Ontario, mineral rights are expressly reserved if they are not to be included. In Nova Scotia, no mineral rights belong to the owner of the land except those pertaining to gypsum, agricultural limestone and building materials, and the Lieutenant Governor in Council may declare deposits of either limestone or building materials to be minerals. Such declaration is to be based on economic value or to serve the public interest. In such case, the initial privilege of acquiring the declared minerals lies with the owner of the surface rights who must then conform with the requirements of the Mines Act. In Newfoundland, mineral and quarry rights are expressly reserved. Some early grants in British Columbia, Alberta, Saskatchewan, Manitoba, New Brunswick, Quebec and Newfoundland also included certain mineral rights. Otherwise, mining rights must be obtained separately by lease or grant from the provincial authority administering the mining laws and regulations. Mining activities may be classified as placer, general minerals (or veined minerals and bedded minerals), fuels (coal, petroleum and gas) and quarrying. Provincial mining regulations under these divisions are summarized in the following paragraphs.

In most provinces where placer deposits occur regulations define the size of placer holdings, the terms under which they may be acquired and held, and the royalties to be paid.

General minerals are sometimes described as quartz, lode, or minerals in place. The most elaborate laws and regulations apply in this division. In all provinces except Alberta, Saskatchewan and Manitoba, a prospector's or miner's licence, valid for one year, must be obtained to search for mineral deposits, the licence being general in some areas but limited in others; a claim of promising ground of a specified size may then be staked. In British Columbia a licence is required only for staking and any number of dispositions may be staked under one licence. A claim must be recorded within a time limit and payment of recording fees made, except in Quebec where no fees are required. Work to a specified value per annum must be performed upon the claim for a period of up to 10 years except in Quebec where a development licence may be renewed on a yearly basis; also in Manitoba and Saskatchewan there is no work commitment in the first year of the claim. The maximum life of a prospecting licence in Nova Scotia is six years continuous from the original date of issue, after which the operator is expected to go to lease with a productive deposit. In Quebec and Nova Scotia a specified cost of work must be performed and any excess amount expended may be applied to subsequent renewals of the development licence. The taxation applied most frequently is a percentage of net profits of producing mines or royalties. In Saskatchewan, subsurface mineral regulations covering non-metallics stipulate the size and type of dispositions that may be made in order to maintain the disposition in good standing, provide for fees, rentals and royalties, and set out generally the rights and obligations of the disposition holder.

In provinces where coal occurs, the size of holdings is laid down together with the conditions of work and rental under which they may be held. In Quebec, the search for petroleum and natural gas may be carried out under an exploration licence followed by an operating lease; the exploration licence covers a period of five years and an acreage of not over 60,000 acres, whereas the operating lease extends over a 20-year period and an area not less than 500 or more than 5,000 acres. In Nova Scotia, mining rights to certain minerals, including petroleum, occurring under differing conditions may be held by different licensees. Provision is sometimes made for royalties. Acts or regulations govern methods of production. In the search for petroleum and natural gas, an exploration permit or reservation is usually required; however, in Saskatchewan, Alberta and British Columbia leases usually follow the exploration reservation whether or not any discovery of oil or gas is made. In Alberta, exploration costs are applicable in part on the first year's lease rental, in Manitoba they may be applied to the lease rental for a period of up to three years, in British Columbia credit is given for up to 24 months' rental, and in Saskatchewan, credit is given for up to three years rental, having regard to the amount of excess credit established. In other provinces, the discovery of oil or gas is usually prerequisite to obtaining a lease or grant of a limited area, subject to carrying out drilling obligations and paying a rental, a fee, or a royalty on production.

Quarrying regulations define the size of holdings and the terms of lease or grant. In Nova Scotia, sand deposits of a quality suitable for uses other than building purposes and limestone deposits of metallurgical grade belong to the Crown; gypsum deposits belong to the owner of the property. Under the New Brunswick Quarriable Substances Act, 1968, quarriable substances (ordinary stone, building and construction stone, sand, gravel, peat and peat moss) are vested in the owner of the land in or on which they lie; the Minister with the approval of the Lieutenant Governor in Council may designate a shore area lying outside Crown land to be subject to the Act; and no person shall take or remove or cause to be taken or removed more than one half cubic yard of a quarriable substance from Crown land or a designated shore area without obtaining a permit or lease. On Quebec public lands and on those granted to individuals after January 1, 1966, the stone, sand and gravel, like other building materials, belong to the Crown; quarries located on land granted to individuals prior to 1966 remain in the possession of the owners of the surface; the right to exploit all building materials except sand and gravel may be acquired by ordinary staking-out and the right to work sand and gravel beds is set by regulation. In Saskatchewan, sand and gravel on the surface and all sand and gravel obtainable by stripping off the overburden or other surface operation belong to the owner of the surface of the land. In Alberta, sand, gravel, clay and marl recovered by excavating from the surface belong to the owner of the surface of the land. British Columbia, Manitoba and Saskatchewan have made provision for participation by the Crown, at the option of the Crown, in all future mineral development. Such participation may be by way of association, joint venture or otherwise, usually through a Crown corporation. Copies of mining legislation including regulations and other details may be obtained from the provincial authorities concerned.

Sources

- 12.1 - 12.2.1 Minerals and Metals Division, Mineral Development Sector, Department of Energy, Mines and Resources.
- 12.2.2 Resources and Development Division, Mineral Development Sector, Department of Energy, Mines and Resources.
- 12.3 - 12.3.4 Mining Industry Financial and Corporate Analysis Division, Mineral Development Sector, Department of Energy, Mines and Resources.

Tables

..	not available	bbl	barrels
...	not appropriate or not applicable	b/d	barrels a day
—	nil or zero	Mcf	thousand cubic feet
--	too small to be expressed	MMcf	million cubic feet
e	estimate	MMMcf	billion cubic feet
p	preliminary	MMMMcf	trillion cubic feet
r	revised	million = 10 ⁶ , billion = 10 ⁹ , trillion = 10 ¹²	
certain tables may not add due to rounding			

12.1 Value of mineral production, 1886-1973

Year	Total value \$'000	Value per capita \$	Year	Total value \$'000	Value per capita \$	Year	Total value \$'000	Value per capita \$
1886	10,221	2.23	1925	226,583	24.38	1965	3,714,861	189.11
1890	16,763	3.51	1930	279,874	27.42	1967	4,380,805	214.96
1895	20,506	4.08	1935	312,344	28.84	1968	4,722,249	227.64
1900	64,421	12.15	1940	529,825	46.55	1969	4,734,284	225.43
1905	69,079	11.51	1945	498,755	41.31	1970	5,722,059	268.68
1910	106,824	15.29	1950 ^a	1,045,450	76.24	1971 ^r	5,962,692	276.45
1915	137,109	17.18	1955	1,795,311	114.37	1972 ^r	6,404,784	293.39
1920	227,860	26.63	1960	2,492,510	139.48	1973	8,364,742	378.58

^aValue of Newfoundland production included from 1950.

12.2 Value of mineral production by class, 1964-73 (thousand dollars)

Year	Metallics	Non-metallics	Fuels	Structural materials	Total
1964	1,701,649	287,497	973,003	403,058	3,365,207
1965	1,907,576	327,239	1,045,885	434,162	3,714,861
1966	1,984,673	363,388	1,151,836	480,650	3,980,546
1967	2,285,279	406,269	1,234,596	454,660	4,380,805
1968	2,492,600	446,922	1,343,163	439,563	4,722,249
1969	2,377,523	450,189	1,465,400	441,172	4,734,284
1970	3,073,344	480,538	1,717,731	450,446	5,722,059
1971	2,940,287	500,827	2,014,410	507,168 ^r	5,962,692 ^r
1972	2,952,413	513,488	2,367,554	571,329 ^r	6,404,784 ^r
1973	3,850,072	614,441	3,227,142	673,087	8,364,742

12.3 Quantity indexes of production of the principal mining industries, 1964-73 (1961=100)

Mining industry	1964	1965	1966	1967	1968 ^r	1969 ^r	1970 ^r	1971 ^r	1972 ^r	1973
Metal mines	120.2	122.8	121.1	129.3	135.7	127.4	152.1	151.0	143.4	158.4
Placer gold and gold quartz	90.1	87.4	82.2	73.6	66.8	64.9	57.7	55.7	50.6	44.9
Iron	208.6	224.8	241.5	260.7	313.8	274.8	347.0	341.6	279.2	362.6
Miscellaneous	111.4	112.7	108.6	117.9	119.2	114.7	137.2	137.0	137.6	145.3
Non-metal mines (except coal)	139.2	151.5	164.2	173.6	191.9	202.3	211.0	218.3	213.8	233.7
Asbestos	121.9	118.2	127.7	125.6	135.9	133.0	146.5	152.5	147.4	157.3
Mineral fuels	133.0	142.0	152.4	166.1	181.1	199.0	229.6	256.2	304.0	331.9
Coal	109.8	111.9	103.7	103.1	100.2	99.6	128.2	147.5	205.5	219.5
Crude oil and natural gas	137.2	147.4	161.2	177.5	195.7	217.0	247.9	275.8	321.8	352.2
Total, mines (incl. milling) quarries and oil wells	126.0	131.9	134.2	142.1	152.4	153.5	175.3	183.1	192.2	210.5

12.4 Quantity and value of mineral production, 1972 and 1973

Mineral	1972		1973	
	Quantity	Value \$	Quantity	Value \$
METALLICS		2,952,412,514		3,850,072,222
Antimony	lb.	1,243,542		3,806,760
Bismuth	"	849,675		347,765
Cadmium	"	4,267,987	70,684	15,275,603
Calcium	"	469,378	4,196,594	489,813
Cobalt	"	3,351,108	651,921	8,899,200
Columbium (Cb ₂ O ₅)	"	3,873,787	3,344,352	4,232,831
Copper	"	1,586,606,832	3,176,895	1,157,507,211
Gold	oz t	2,078,567	1,816,481,691	190,376,168
Indium	"	462,000	1,954,340	681,000
Iron ore	ton	42,698,462	52,358,112	606,106,151
Iron, remelt	"	41,543,927		48,970,792
Lead	lb.	738,849,301	753,878,973	121,676,066
Magnesium	"	11,847,671	4,537,125	5,482,588
Mercury	"	1,112,412		950,000
Molybdenum	"	28,493,007	30,391,463	51,851,509
Nickel	"	517,974,549	717,485,105	813,100,951
Platinum group	oz t	406,048	34,656,545	41,993,743
Selenium	lb.	582,060	5,186,155	4,762,946

12.4 Quantity and value of mineral production, 1972 and 1973 (concluded)

Mineral	1972		1973	
	Quantity	Value \$	Quantity	Value \$
METALLICS (concluded)				
Silver	oz t	44,792,209	74,802,988	47,487,589
Tantalum (Ta ₂ O ₅)	lb.	41,120	246,658	170,582
Tellurium	"	45,649	271,155	92,284
Tin	"	351,043	473,908	290,760
Tungsten (WO ₃)	"	4,447,316	..	4,640,400
Uranium (U ₃ O ₈)	"	9,762,700	..	9,517,134
Yttrium (Y ₂ O ₃)	"	—	—	..
Zinc	"	2,488,284,385	474,540,715	2,704,148,416
NON-METALLICS				
Asbestos	ton	1,687,051	513,488,411	614,441,482
Barite	"	77,261	206,088,535	234,322,903
Diatomite	"	..	804,096	1,052,275
Feldspar	"	11,684	232,383	..
Fluorspar	"	..	5,432,151	4,620,382
Gemstones	lb.	703,725	305,218	306,808
Gypsum	ton	8,099,480	19,335,891	21,066,809
Helium	Mcf	..	..	..
Magnetite dolomite and brucite	ton	..	2,928,942	2,655,968
Nepheline syenite	"	559,483	5,902,063	7,860,300
Nitrogen	Mcf	..	569,403	..
Peat moss	ton	375,725	13,612,326	15,376,482
Potash (K ₂ O)	"	3,852,120	135,512,850	176,875,825
Pyrite, pyrrhotite	"	125,897	456,157	173,021
Quartz	"	2,663,836	9,536,318	11,051,181
Salt	"	5,416,925	40,143,665	49,630,982
Soapstone, talc, pyrophyllite	"	80,946	1,462,507	1,778,091
Sodium sulphate	"	507,275	6,200,598	7,165,168
Sulphur, in smelter gas	"	678,844	5,118,483	10,069,746
Sulphur, elemental	"	3,635,631	19,587,807	23,816,072
Titanium dioxide, etc.	"	..	40,828,421	46,619,469
FUELS				
Coal	ton	20,709,316	2,367,553,821	3,227,141,758
Natural gas	Mcf	2,913,537,215	150,600,310	179,731,422
Natural gas by-products	bbl	108,586,704	397,185,830	451,853,205
Oil, crude	"	561,976,934	250,940,075	348,865,249
STRUCTURAL MATERIALS				
Clay products	..	..	571,328,810 ^r	673,086,739
Cement	ton	10,038,617 ^r	52,556,655 ^r	61,170,321
Lime	"	1,744,156 ^r	210,685,000 ^r	240,560,991
Sand and gravel	"	225,194,000	26,661,000 ^r	30,339,557
Stone	"	80,202,524	178,100,000	213,437,316
Total	..	..	103,326,155	127,578,554
		6,404,783,556 ^r	..	8,364,742,201

12.5 Percentage of the total value contributed by principal minerals, 1964-73

Mineral	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
METALLICS¹										
Copper	50.2	50.9	50.0	51.9	52.7	50.2	53.7	49.3	46.1	46.0
Gold	9.6	10.2	11.4	13.2	12.9	12.4	13.6	12.7	12.6	13.8
Iron ore	4.3	3.6	3.2	2.6	2.2	2.0	1.5	1.3	1.9	2.3
Lead	11.9	11.0	10.9	10.7	11.3	9.6	10.3	9.3	7.6	7.2
Molybdenum	1.6	2.4	2.3	2.0	1.9	2.0	2.2	1.8	1.8	1.5
Nickel	0.6	0.5	0.9	0.9	0.8	1.1	1.0	0.6	0.7	0.6
Platinum group	11.2	11.5	9.5	10.5	11.2	10.2	14.5	13.4	11.2 ^r	9.7
Silver	0.7	1.0	0.8	0.8	1.0	0.7	0.8	0.7	0.5	0.5
Uranium	1.2	1.2	1.2	1.4	2.2	1.8	1.4	1.2	1.2	1.4
Zinc	2.5	1.7	1.4	1.2	1.1	1.1	..	..	..	..
	5.7	6.6	7.3	7.3	6.9	7.8	7.0	7.0	7.4	7.8
NON-METALLICS¹										
Asbestos	8.4	8.7	9.1	9.2	9.5	9.5	8.4	8.4	8.0	7.3
Gypsum	4.3	3.9	4.1	3.8	3.9	4.1	3.6	3.4	3.2	2.8
Nepheline syenite	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potash	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Quartz	0.9	1.5	1.6	1.5	1.4	1.5	1.9	2.3	2.1	2.1
Salt	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sodium sulphate	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.7	0.6	0.6
Sulphur, in smelter gas	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Sulphur, elemental	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
Titanium dioxide, etc.	0.6	0.7	1.0	1.6	1.7	1.3	0.5	0.4	0.3	0.3
	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.7	0.6	0.6
FUELS¹										
Coal	29.5	28.8	29.0	28.7	28.4	30.9	30.0	33.7	37.0	38.6
Natural gas	2.1	2.0	2.1	1.9	1.1	1.1	1.5	2.0	2.4 ^r	2.1
Oil, crude	5.1	5.0	4.5	4.5	4.8	5.5	5.5	5.7	6.2	5.4
	19.9	19.3	19.9	19.7	19.8	21.4	20.2	22.7	24.5	26.9

12.5 Percentage of the total value contributed by principal minerals, 1964-73 (concluded)

Mineral	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
STRUCTURAL MATERIALS	11.9	11.6	11.9	10.2	9.4	9.4	7.9	8.6	8.9	8.1
Clay products	1.2	1.2	1.1	1.0	1.0	1.1	0.9	0.8	0.8	0.7
Cement	3.9	3.8	3.9	3.3	3.2	3.4	2.7	3.2	3.2 ^r	2.9
Lime	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Sand and gravel	3.7	3.6	3.8	3.2	2.8	2.6	2.3	2.6	2.9 ^r	2.6
Stone	2.5	2.5	2.6	2.3	2.0	1.9	1.5	1.6	1.6	1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^rIncludes minor items not specified.

12.6 Value of mineral production, by province, 1964-73 (thousand dollars)

Year	Province or territory						
	Newfound- land (incl. Labrador)	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
1964	182,153	831	66,228	48,678	684,583	904,077	173,873
1965	207,558	599	71,007	82,164	715,901	993,731	182,144
1966	244,020	1,063	85,596	90,208	771,180	957,852	179,342
1967	266,365	1,775	52,544	90,440	741,436	1,194,549	184,679
1968	309,712	977	56,940	88,452	725,078	1,355,629	209,626
1969	256,936	452	58,562	94,593	717,156	1,222,172	246,275
1970	353,261	640	58,159	104,791	803,286	1,593,039	332,214
1971 ^r	343,431	978	60,083	107,233	766,473	1,554,777	330,060
1972 ^r	290,659	1,097	57,522	120,171	785,962	1,532,441	323,292
1973	374,506	1,680	61,719	162,355	926,083	1,852,875	419,214
	Saskat- chewan	Alberta	British Columbia	Yukon Territory	Northwest Territories	Canada	
1964	293,287	709,487	268,724	15,204	18,081	3,365,207	
1965	328,852	761,893	280,156	13,401	77,456	3,714,861	
1966	348,505	848,667	330,898	11,976	111,239	3,980,546	
1967	361,824	974,366	379,555	14,991	118,283	4,380,805	
1968	357,082	1,092,444	389,307	21,366	115,636	4,722,249	
1969	344,625	1,205,308	433,633	35,403	119,171	4,734,284	
1970	379,190	1,395,994	490,158	77,512	133,814	5,722,059	
1971 ^r	409,956	1,640,508	540,527	93,111	115,555	5,962,692	
1972 ^r	409,889	1,978,750	677,883	106,781	120,337	6,404,784	
1973	510,313	2,764,142	975,699	150,667	165,489	8,364,742	

12.7 Value of metallics, non-metallics, fuels and structural materials produced, by province, 1972 and 1973 (thousand dollars)

Year and province or territory	Metallics	Non- metallics	Fuels	Structural materials	Total
1972					
Newfoundland (incl. Labrador)	261,013	19,320	—	10,327	290,659
Prince Edward Island	—	—	—	1,097	1,097
Nova Scotia	2	22,575	16,117	18,828	57,522
New Brunswick	98,773	3,821	3,553	14,024	120,171
Quebec	433,364	212,083	26	140,489	785,962
Ontario	1,251,474	44,204	7,266	229,497	1,532,441
Manitoba	272,974	3,107	14,588	32,623	323,292
Saskatchewan	21,855	145,636	231,938	10,460	409,889
Alberta	—	22,363	1,908,400	47,987	1,978,750
British Columbia	401,557	27,374	182,955	65,997	677,883
Yukon Territory	93,496	13,006	279	—	106,781
Northwest Territories	117,905	—	2,432	—	120,337
Canada, 1972	2,952,413	513,488	2,367,554	571,329 ^r	6,404,784 ^r
1973					
Newfoundland (incl. Labrador)	335,831	25,325	—	13,350	374,506
Prince Edward Island	—	—	—	1,680	1,680
Nova Scotia	156	24,060	15,568	21,935	61,719
New Brunswick	132,798	4,162	3,434	21,961	162,355
Quebec	515,193	239,975	28	170,887	926,083
Ontario	1,521,831	57,205	6,544	267,295	1,852,875
Manitoba	363,650	3,360	17,148	35,056	419,214
Saskatchewan	23,867	188,255	284,116	14,075	510,313
Alberta	17	28,276	2,683,695	52,154	2,764,142
British Columbia	661,052	29,908	210,045	74,694	975,699
Yukon Territory	136,752	13,915	—	—	150,667
Northwest Territories	158,925	—	6,564	—	165,489
Canada, 1973	3,850,072	614,441	3,227,142	673,087	8,364,742

12.8 Detailed mineral production, by province, 1973 with totals for 1972

Mineral		Province or territory				
		Newfound- land (incl. Labrador)	Nova Scotia	New Brunswick	Quebec	Ontario
METALLICS	\$	335,830,947	156,135	132,797,907	515,192,957	1,521,831,172
Antimony	lb.	—	—	—	—	—
	\$	—	—	2,614,642	—	—
Bismuth	lb.	—	—	62,622	1,134	4,077
	\$	—	—	308,100	5,579	20,059
Cadmium	lb.	52,498	—	—	270,518	2,764,697
	\$	191,093	—	—	984,686	10,063,497
Calcium	lb.	—	—	—	—	651,921
	\$	—	—	—	—	489,813
Cobalt	lb.	—	—	—	—	2,528,297
	\$	—	—	—	—	6,913,957
Columbium (Cb ₂ O ₃)	lb.	—	—	—	3,176,895	—
	\$	—	—	—	4,232,831	—
Copper	lb.	17,292,755	6,778	20,620,168	315,682,131	574,646,559
	\$	11,031,913	4,324	13,154,636	201,389,415	365,305,858
Gold	oz t	14,345	—	5,202	478,680	922,303
	\$	1,397,375	—	506,737	46,629,176	89,843,380
Indium	oz t	—	—	—	—	—
	\$	—	—	—	—	—
Iron ore	ton	24,397,568	—	—	13,970,759	12,424,318
	\$	314,838,603	—	—	125,892,911	152,468,574
Iron, remelt	ton	—	—	—	—	—
	\$	—	—	—	—	—
Lead	lb.	16,887,322	583,160	88,023,029	48,970,792	22,992,009
	\$	2,725,614	94,122	14,206,916	2,703,021	3,710,910
Magnesium	lb.	—	—	—	436,268	13,679,528
	\$	—	—	—	—	5,482,588
Mercury	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Molybdenum	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Nickel	lb.	—	—	—	724,057	393,293,298
	\$	—	—	—	1,107,807	574,786,081
Platinum group	oz t	—	—	—	—	352,909
	\$	—	—	—	—	41,844,285
Selenium	lb.	—	—	—	271,119	94,950
	\$	—	—	—	2,478,028	867,843
Silver	oz t	572,918	22,838	3,568,678	3,050,999	19,617,406
	\$	1,447,191	57,689	9,014,480	7,706,823	49,553,568
Tantalum (Ta ₂ O ₅)	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Tellurium	lb.	—	—	—	62,772	15,346
	\$	—	—	—	381,026	93,150
Tin	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Tungsten (WO ₃)	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Uranium (U ₃ O ₈)	lb.	—	—	—	—	8,114,567
	\$	—	—	—	—	—
Yttrium (Y ₂ O ₃)	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Zinc	lb.	17,390,700	—	385,125,471	310,517,749	912,729,270
	\$	4,199,158	—	92,992,396	74,977,615	220,387,609
NON-METALLICS	\$	25,324,894	24,059,801	4,162,056	239,974,511	57,204,607
Asbestos	ton	98,622	—	—	1,518,726	35,928
	\$	17,529,667	—	—	177,887,119	3,888,085
Barite	ton	—	767,247	—	—	—
	\$	—	—	—	—	—
Diatomite	ton	—	—	—	—	—
	\$	—	—	—	—	—
Feldspar	ton	—	—	—	—	—
	\$	—	—	—	—	—
Fluorspar	ton	—	—	—	—	—
	\$	—	—	—	—	—
Gemstones	lb.	4,620,382	—	—	—	—
	\$	—	—	—	—	—
Gypsum	ton	808,833	6,178,255	92,274	—	754,330
	\$	2,324,614	14,448,797	265,960	—	2,393,625
Helium	Mcf	—	—	—	—	—
	\$	—	—	—	—	—
Magnesian dolomite and brucite	ton	—	—	—	—	—
	\$	—	—	—	2,655,968	—
Nepheline syenite	ton	—	—	—	—	569,403
	\$	—	—	—	—	7,860,300
Nitrogen	Mcf	—	—	—	—	—
	\$	—	—	—	—	—
Peat moss	ton	—	7,562	72,750	144,392	8,894
	\$	—	418,417	3,456,214	5,695,254	547,814
Potash (K ₂ O)	ton	—	—	—	—	—
	\$	—	—	—	—	—
Pyrite, pyrrhotite	ton	—	—	—	25,684	—
	\$	—	—	—	173,021	—
Quartz	ton	—	—	—	907,044	1,181,348
	\$	363,443	109,000	—	5,276,015	3,360,622
Salt	ton	—	751,855	—	—	4,161,436
	\$	—	8,316,340	—	—	33,166,178

12.8 Detailed mineral production, by province, 1973 with totals for 1972 (continued)

Mineral		Province or territory				
		Newfound- land (incl. Labrador)	Nova Scotia	New Brunswick	Quebec	Ontario
NON-METALLICS (concluded)						
Soapstone, talc, pyrophyllite	ton		—	—		
	\$	486,788			740,504	550,799
Sodium sulphate	ton	—	—	—	—	—
	\$	—	—	—	—	—
Sulphur, in smelter gas	ton	—	—	33,049	69,659	398,473
	\$	—	—	439,882	927,161	5,303,675
Sulphur, elemental	ton	—	—	—	—	6,684
	\$	—	—	—	—	133,509
Titanium dioxide, etc.	ton	—	—	—	—	—
	\$	—	—	—	46,619,469	—
FUELS	\$	—	15,568,013	3,434,416	28,149	6,543,700
Coal	ton	—	1,175,587	394,219	—	—
	\$	—	15,568,013	3,389,776	—	—
Natural gas	Mcf	—	—	81,008	197,337	9,528,102
	\$	—	—	30,752	28,149	3,677,847
Natural gas by-products	bbl	—	—	—	—	—
	\$	—	—	—	—	—
Oil, crude	bbl	—	—	9,920	—	808,649
	\$	—	—	13,888	—	2,865,853
STRUCTURAL MATERIALS	\$	13,350,411	21,935,199	21,960,261	170,887,422	267,295,407
Clay products	\$	260,000	2,101,071	839,520	9,724,810	34,600,965
Cement	ton				3,491,777	4,197,754
	\$	3,748,371	5,576,914	5,203,050	65,331,147	85,634,181
Lime	ton	—	—	—	336,988	1,236,382
	\$	—	—	995,000	4,886,326	19,782,112
Sand and gravel	ton	6,466,357	11,348,366	9,553,595	51,542,797	80,567,636
	\$	8,370,503	12,524,342	10,550,290	32,485,922	74,408,416
Stone	ton	394,311	812,928	2,376,076	48,155,998	35,539,327
	\$	971,537	1,732,872	4,372,401	58,459,217	52,869,733
Total 1973	\$	374,506,252	61,719,148	162,354,640	926,083,039	1,852,874,886
Total 1972†	\$	290,659,060	57,522,486	120,170,980	785,961,558	1,532,441,185
		Manitoba	Saskatchewan	Alberta	British Columbia	
METALLICS						
Antimony	\$ lb.	363,649,650	23,867,033	17,088	661,051,995	
	\$	—	—	—	1,660,331	
Bismuth	\$ lb.	—	—	—	1,192,118	
	\$	—	—	—	2,851	
Cadmium	\$ lb.	205,204	63,538	—	14,027	
	\$	746,943	231,278	—	810,779	
Calcium	\$ lb.	—	—	—	2,951,236	
	\$	—	—	—	—	
Cobalt	\$ lb.	775,148	—	—	40,907	
	\$	1,867,840	—	—	117,403	
Columbium (Cb ₂ O ₅)	\$ lb.	—	—	—	—	
	\$	—	—	—	—	
Copper	\$ lb.	142,666,353	20,447,986	—	700,198,538	
	\$	91,013,999	13,044,793	—	446,664,289	
Gold	oz t	48,023	26,527	175	189,145	
	\$	4,678,016	2,584,048	17,048	18,424,992	
Indium	oz t	—	—	—	681,000	
	\$	—	—	—	—	
Iron ore	\$ ton	—	—	—	1,565,467	
	\$	—	—	—	12,906,063	
Iron, remelt	\$ ton	—	—	—	—	
	\$	—	—	—	—	
Lead	\$ lb.	127,390	—	—	187,153,430	
	\$	20,561	—	—	30,206,564	
Magnesium	\$ lb.	—	—	—	—	
	\$	—	—	—	—	
Mercury	\$ lb.	—	—	—	950,000	
	\$	—	—	—	—	
Molybdenum	\$ lb.	—	—	—	30,391,463	
	\$	—	—	—	51,851,509	
Nickel	\$ lb.	149,164,843	—	—	2,467,472	
	\$	228,222,210	—	—	3,775,232	
Platinum group	oz t	—	—	—	—	
	\$	—	—	—	—	
Selenium	\$ lb.	117,200	37,841	—	—	
	\$	1,071,208	345,867	—	—	
Silver	oz t	1,082,763	458,241	16	7,619,413	
	\$	2,735,059	1,157,517	40	19,246,637	
Tantalum (Ta ₂ O ₅)	\$ lb.	170,582	—	—	—	
	\$	1,164,749	—	—	—	
Tellurium	\$ lb.	10,709	3,457	—	—	
	\$	65,004	20,984	—	—	

12.8 Detailed mineral production, by province, 1973 with totals for 1972 (continued)

Mineral	Province or territory			
	Manitoba	Saskatchewan	Alberta	British Columbia
METALLICS (concluded)				
Tin	lb. —	—	—	290,760
	\$ —	—	—	569,890
Tungsten (WO ₃)	lb. —	—	—	1,411,800
	\$ —	—	—	..
Uranium (U ₃ O ₈)	lb. —	1,402,567	—	—
	\$ —	..	—	—
Yttrium (Y ₂ O ₃)	lb. —	—	—	—
	\$ —	—	—	—
Zinc	lb. 132,792,434	26,847,286	—	302,874,331
	\$ 32,064,061	6,482,546	—	73,132,035
NON-METALLICS				
Asbestos	\$ 3,360,473	188,255,391	28,276,729	29,907,880
	ton —	—	—	108,966
	\$ —	—	—	21,102,892
Barite	ton —	—	—	—
	\$ —	—	—	285,028
Diatomite	ton —	—	—	..
	\$ —	—	—	..
Feldspar	ton —	—	—	—
	\$ —	—	—	—
Fluorspar	ton —	—	—	—
	\$ —	—	—	—
Gemstones	lb. —	—	—	154,251
	\$ —	—	—	306,808
Gypsum	ton 190,231	—	—	365,249
	\$ 519,804	—	—	1,114,009
Helium	Mcf —	..	—	—
	\$ —	..	—	—
Magnesitic dolomite and brucite	ton —	—	—	—
	\$ —	—	—	—
Nepheline syenite	ton —	—	—	—
	\$ —	—	—	—
Nitrogen	Mcf —	..	—	—
	\$ —	..	—	—
Peat moss	ton 29,057	6,846	13,528	75,776
	\$ 1,381,940	282,521	443,442	3,150,880
Potash (K ₂ O)	ton —	4,909,438	—	—
	\$ —	176,875,825	—	—
Pyrite, pyrrhotite	ton —	—	—	—
	\$ —	—	—	—
Quartz	ton 367,642	133,115	—	32,187
	\$ 1,286,206	120,000	362,217	173,678
Salt	ton 36,224	284,834	330,278	—
	\$ 160,000	4,621,469	3,366,995	—
Soapstone, talc, pyrophyllite	ton —	—	—	—
	\$ —	—	—	—
Sodium sulphate	ton —	6,206,970	958,198	—
	\$ —	—	—	—
Sulphur, in smelter gas	ton —	—	—	255,374
	\$ —	—	—	3,399,028
Sulphur, elemental	ton 1,646	17,410	4,507,232	60,883
	\$ 12,523	148,606	23,145,877	375,557
Titanium dioxide, etc.	ton —	—	—	—
	\$ —	—	—	—
FUELS				
Coal	\$ 17,147,991	284,115,855	2,683,694,852	210,045,235
	ton —	4,028,280	9,196,397	7,772,866
	\$ —	8,500,156	59,903,763	92,369,714
Natural gas	Mcf —	65,887,098	2,537,641,000	469,253,210
	\$ —	9,044,128	388,696,255	46,052,133
Natural gas by-products	bbl —	1,279,117	112,528,949	2,442,503
	\$ —	2,514,090	340,371,215	5,979,944
Oil, crude	bbl 5,083,899	85,935,503	541,736,139	21,316,267
	\$ 17,147,991	264,057,481	1,894,723,619	65,643,444
STRUCTURAL MATERIALS				
Clay products	\$ 35,055,877	14,074,255	52,153,692	74,693,988
	\$ 1,257,457	2,014,339	4,781,869	5,590,290
Cement	ton 647,755	215,224	1,033,413	950,772
	\$ 17,015,644	6,857,036	26,259,024	24,935,624
Lime	ton —	—	129,974	48,694
	\$ 1,281,924	—	2,450,009	944,186
Sand and gravel	ton 12,782,518	6,835,940	18,606,708	34,125,707
	\$ 14,484,176	5,202,880	17,851,855	35,878,705
Stone	ton 625,282	—	160,644	3,829,421
	\$ 1,016,676	—	810,935	7,345,183
Total 1973	\$ 419,213,991	510,312,534	2,764,142,361	975,699,098
Total 1972†	\$ 323,291,910	409,889,127	1,978,749,689	677,882,724

12.8 Detailed mineral production, by province, 1973 with totals for 1972 (continued)

Mineral		Province or territory			
		Yukon Territory	Northwest Territories	Canada 1973	1972
METALLICS	\$	136,752,171	158,925,167	3,850,072,222	2,952,412,514
Antimony	lb.	—	—	3,806,760	1,243,542
	\$	—	—	70,684	275,029
Bismuth	lb.	—	—	347,765	849,675
	\$	—	—	4,196,594	4,267,987
Cadmium	lb.	12,560	16,800	15,275,603	10,798,008
	\$	45,718	61,152	651,921	469,378
Calcium	lb.	—	—	489,813	337,609
	\$	—	—	3,344,352	3,351,108
Cobalt	lb.	—	—	8,899,200	8,320,722
	\$	—	—	3,176,895	3,873,787
Columbium (Cb ₂ O ₃)	lb.	—	—	4,232,831	3,868,448
	\$	—	—	1,816,481,691	1,586,606,832
Copper	lb.	23,186,245	1,734,178	1,157,507,211	806,427,128
	\$	14,791,665	1,106,319	1,954,340	2,078,567
Gold	oz t	20,865	249,075	190,376,168	119,742,087
	\$	2,032,502	24,262,894	681,000	462,000
Indium	oz t	—	—	—	—
	\$	—	—	52,358,112	42,698,462
Iron ore	ton	—	—	606,106,151	489,023,459
	\$	—	—	—	—
Iron, remelt	ton	—	—	—	—
	\$	—	—	48,970,792	41,543,927
Lead	lb.	235,522,452	199,887,160	753,878,973	738,849,301
	\$	38,013,324	32,261,787	121,676,066	113,989,670
Magnesium	lb.	—	—	13,679,528	11,847,671
	\$	—	—	5,482,588	4,537,125
Mercury	lb.	—	—	950,000	1,112,412
	\$	—	—	—	—
Molybdenum	lb.	—	—	30,391,463	28,493,007
	\$	—	—	51,851,509	44,067,885
Nickel	lb.	3,404,981	—	549,054,651	517,974,549
	\$	5,209,621	—	813,100,951	717,485,105
Platinum group	oz t	1,314	—	354,223	406,048
	\$	149,458	—	41,993,743	34,656,545
Selenium	lb.	—	—	521,110	582,060
	\$	—	—	4,762,946	5,186,155
Silver	oz t	6,073,973	5,420,344	47,487,589	44,792,209
	\$	15,342,856	13,691,789	119,953,649	74,802,988
Tantalum (Ta ₂ O ₅)	lb.	—	—	170,582	41,120
	\$	—	—	1,164,749	246,658
Tellurium	lb.	—	—	92,284	45,649
	\$	—	—	560,164	271,155
Tin	lb.	—	—	290,760	351,043
	\$	—	—	569,890	473,908
Tungsten (WO ₃)	lb.	—	3,228,600	4,640,400	4,447,316
	\$	—	—	—	—
Uranium (U ₃ O ₈)	lb.	—	—	9,517,134	9,762,700
	\$	—	—	—	—
Yttrium (Y ₂ O ₃)	lb.	—	—	—	—
	\$	—	—	—	—
Zinc	lb.	253,321,575	362,549,600	2,704,148,416	2,488,284,385
	\$	61,167,027	87,541,226	652,943,673	474,540,715
NON-METALLICS	\$	13,915,140	—	614,441,482	513,488,411
Asbestos	ton	100,734	—	1,862,976	1,687,051
	\$	13,915,140	—	234,322,903	206,088,535
Barite	ton	—	—	101,580	77,261
	\$	—	—	1,052,275	804,096
Diatomite	ton	—	—	—	—
	\$	—	—	—	—
Feldspar	ton	—	—	—	11,684
	\$	—	—	—	232,383
Fluorspar	ton	—	—	—	—
	\$	—	—	4,620,382	5,432,151
Gemstones	lb.	—	—	154,251	703,725
	\$	—	—	306,808	305,218
Gypsum	ton	—	—	8,389,172	8,099,480
	\$	—	—	21,066,809	19,335,891
Helium	Mcf	—	—	—	—
	\$	—	—	—	—
Magnesitic dolomite and brucite	ton	—	—	2,655,968	2,928,942
	\$	—	—	569,403	559,483
Nepheline syenite	ton	—	—	7,860,300	5,902,063
	\$	—	—	—	—
Nitrogen	Mcf	—	—	—	—
	\$	—	—	—	—
Peat moss	ton	—	—	358,805	375,725
	\$	—	—	15,376,482	13,612,326
Potash (K ₂ O)	ton	—	—	4,909,438	3,852,120
	\$	—	—	176,875,825	135,512,850
Pyrite, pyrrhotite	ton	—	—	25,684	125,897
	\$	—	—	173,021	456,157
Quartz	ton	—	—	2,765,944	2,663,836
	\$	—	—	11,051,181	9,536,318

12.8 Detailed mineral production, by province, 1973 with totals for 1972 (concluded)

Mineral	Province or territory				
		Yukon Territory	Northwest Territories	Canada 1973	1972
NON-METALLICS (concluded)					
Salt	ton	—	—	5,564,627	5,416,925
	\$	—	—	49,630,982	40,143,665
Soapstone, talc, pyrophyllite	ton	—	—	81,495	80,946
	\$	—	—	1,778,091	1,462,507
Sodium sulphate	ton	—	—	543,354	507,275
	\$	—	—	7,165,168	6,200,598
Sulphur, in smelter gas	ton	—	—	756,555	678,844
	\$	—	—	10,069,746	5,118,483
Sulphur, elemental	ton	—	—	4,593,855	3,635,631
	\$	—	—	23,816,072	19,587,807
Titanium dioxide, etc.	ton	—	—	—	—
	\$	—	—	46,619,469	40,828,421
FUELS					
Coal	\$	—	6,563,547	3,227,141,758	2,367,553,821
	ton	—	—	22,567,349	20,709,316
	\$	—	—	179,731,422	150,600,310
Natural gas	Mcf	—	36,873,000	3,119,460,755	2,913,537,215
	\$	—	4,323,941	451,853,205	397,185,830
Natural gas by-products	bbl	—	—	116,250,569	108,586,704
	\$	—	—	348,865,249	250,940,075
Oil, crude	bbl	—	962,733	655,853,110	561,976,934
	\$	—	2,239,606	2,246,691,882	1,568,827,606
STRUCTURAL MATERIALS					
Clay products	\$	—	—	673,086,739 ¹	571,328,810 ²
	\$	—	—	61,170,321	52,556,655
Cement	ton	—	—	11,125,738	10,038,617
	\$	—	—	240,560,991	210,685,000
Lime	ton	—	—	1,890,590	1,744,156
	\$	—	—	30,339,557	26,661,000
Sand and gravel	ton	—	—	233,461,479 ¹	225,194,000 ²
	\$	—	—	213,437,316 ¹	178,100,000 ²
Stone	ton	—	—	91,893,987	80,202,524
	\$	—	—	127,578,554	103,326,155
Total 1973	\$	150,667,311	165,488,714	8,364,742,201 ¹	...
Total 1972	\$	106,780,867	120,336,970	...	6,404,783,556 ²

¹Includes 1,631,855 tons of sand and gravel valued at \$1,680,227 produced in Prince Edward Island.²Includes 1,578,000 tons of sand and gravel valued at \$1,097,000 produced in Prince Edward Island.

12.9 Producers' shipments of copper, by province, and total value, 1967-73

Year	Province or territory					
	Newfoundland tons	Nova Scotia tons	New Brunswick tons	Quebec tons	Ontario tons	Manitoba tons
1967	21,965	28	5,786	166,385	276,146	29,560
1968	23,299	140	8,265	167,601	290,618	34,583
1969	20,464	19	6,791	160,068	238,810	37,097
1970	15,193	27	8,022	172,642	295,092	47,906
1971	13,980	16	10,266	184,823	302,370	55,264
1972	9,513	—	10,310	176,432	289,723	59,832
1973	8,647	3	10,310	157,841	287,324	71,333
	Saskatchewan tons	British Columbia tons	Yukon Territory tons	Northwest Territories tons	Canada Shipments tons	Value \$'000
1967	22,975	86,319	3,584	566	613,314	582,585
1968	22,081	80,561	5,299	866	633,313	607,944
1969	18,230	83,708	7,433	626	573,246	588,281
1970	19,473	105,822	7,880	660	672,717	779,242
1971	11,146	140,310	2,566	567	721,430	760,016
1972	12,546	233,506	874	567	793,303	806,427
1973	10,224	350,099	11,593	867	908,241	1,157,507

12.10 Producers' shipments of nickel, by province, and total value, 1967-73

Year	Quebec tons	Ontario tons	Manitoba tons	Saskatchewan tons	British Columbia tons	Yukon Territory tons	Canada Quantity tons	Value \$'000
1967	1,622	190,059	54,714	162	2,090	—	248,647	463,140
1968	886	203,747	57,923	144	1,658	—	264,358	528,236
1969	155	146,781	64,920	266	1,489	—	213,611	481,055
1970	801	224,255	79,121	—	1,704	—	305,881	830,167
1971	748	215,754	76,568	—	1,271	—	294,341	800,064
1972	305	189,428	66,227	—	1,620	1,407	258,987	717,485
1973	362	196,647	74,582	—	1,234	1,702	274,527	813,101

12.11 Iron ore shipments and production of pig iron and steel ingots and castings, 1967-73

Year	Iron ore shipments						Production of pig iron '000 tons	Production of steel ingots and castings '000 tons
	Newfoundland (incl. Labrador) '000 tons	Quebec '000 tons	Ontario '000 tons	British Columbia '000 tons	Canada Quantity '000 tons	Value \$'000		
1967	16,982	14,532	8,650	2,154	42,318	470,122	6,951	9,701
1968	19,705	14,736	10,907	2,095	47,443	532,694	8,322	11,198
1969	14,716	12,779	10,517	2,042	40,054	454,076	7,431	10,048
1970	23,559	15,048	11,828	1,879	52,314	588,631	9,069	12,250
1971	21,877	12,367	11,179	1,930	47,352	555,136	8,635	12,177
1972	18,072	11,615	11,755	1,256	42,698	489,023	9,364	13,073
1973	24,398	13,971	12,424	1,565	52,358	606,106	10,511	14,755

12.12 Producers' shipments of lead from Canadian ores, by province, and total value, 1967-73

Year	Province or territory						Quantity tons	Value \$'000
	Newfoundland tons	Nova Scotia tons	New Brunswick tons	Quebec tons	Ontario tons			
1967	19,940	397	47,016	2,882	5,529			
1968	18,914	2,600	54,350	2,936	12,900			
1969	22,207	2,735	51,092	1,558	12,097			
1970	17,730	1,299	62,675	2,159	11,960			
1971	13,481	415	65,405	647	8,915			
1972	12,202	—	45,490	1,676	10,605			
1973	8,444	291	44,011	1,351	11,496			
Year	Manitoba tons	British Columbia tons	Yukon Territory tons	Northwest Territories tons	Canada Quantity tons	Value \$'000	Quantity tons	Value \$'000
1967	1,785	103,827	7,650	127,377	317,963 ¹	89,030		
1968	1,477	115,586	3,611	125,138	340,175 ¹	91,439		
1969	560	105,036	14,028	106,457	318,632 ¹	96,673		
1970	505	107,419	65,835	119,603	389,185	123,138		
1971	201	123,964	108,668	83,814	405,510	109,488		
1972	196	97,575	111,461	90,220	369,425	113,990		
1973	64	93,577	117,761	99,944	376,939	121,676		

¹Includes 1,560 tons of producers' shipments from Saskatchewan in 1967, 2,663 tons in 1968 and 2,862 tons in 1969.

12.13 Producers' shipments of zinc, by province, and total value, 1967-73

Year	Province or territory						Quantity tons	Value \$'000
	Newfoundland tons	Nova Scotia tons	New Brunswick tons	Quebec tons	Ontario tons	Manitoba tons		
1967	34,851	23	151,357	245,883	268,532	36,258		
1968	36,729	113	135,429	213,153	346,758	45,531		
1969	32,903	132	152,728	198,531	360,286	48,889		
1970	29,913	—	161,094	205,030	340,242	39,463		
1971	20,833	—	161,514	174,419	365,725	24,986		
1972	26,582	—	174,536	163,244	394,891	45,607		
1973	8,695	—	192,563	155,259	456,364	66,396		
Year	Saskatchewan tons	British Columbia tons	Yukon Territory tons	Northwest Territories tons	Canada Quantity tons	Value \$'000	Quantity tons	Value \$'000
1967	28,412	131,415	4,738	209,982	1,111,453	322,099		
1968	29,012	146,098	2,653	203,915	1,159,392	326,949		
1969	25,143	148,333	16,531	224,148	1,207,624	367,842		
1970	21,833	137,795	77,983	238,558	1,251,911	398,859		
1971	8,647	152,726	116,567	224,317	1,249,734	418,161		
1972	16,625	134,174	118,613	169,871	1,244,142	474,541		
1973	13,424	151,437	126,661	181,275	1,352,074	652,944		

12.14 Producers' shipments of gold, by province, and total value, 1967-73

Year	Province or territory						Quantity oz t	Value \$'000
	Newfoundland oz t	Nova Scotia oz t	New Brunswick oz t	Quebec oz t	Ontario oz t	Manitoba oz t		
1967	27,258	1	1,421	835,190	1,495,385	53,945	47,895	
1968	7,803	3	2,202	768,068	1,379,779	39,155	44,970	
1969	8,982	13	1,396	761,370	1,229,666	28,011	39,562	
1970	6,811	—	5,120	703,015	1,162,042	34,642	44,889	
1971	7,341	—	4,236	646,839	1,133,987	30,063	25,960	
1972	14,069	42	3,205	539,669	1,019,303	38,032	30,527	
1973	14,345	—	5,202	478,680	922,303	48,023	26,527	

12.14 Producers' shipments of gold, by province, and total value, 1967-73 (concluded)

Year	Province or territory					Value \$'000
	Alberta oz t	British Columbia oz t	Yukon Territory oz t	Northwest Territories oz t	Canada Quantity oz t	
1967	146	126,823	17,900	380,304	2,986,268	112,732
1968	146	124,422	24,167	352,306	2,743,021	103,439
1969	133	117,792	29,682	328,502	2,545,109	95,925
1970	152	101,197	17,862	332,844	2,408,574	88,057
1971	79	89,413	14,473	308,339	2,260,730	79,903
1972	3	122,159	4,079	307,479	2,078,567	119,742
1973	175	189,145	20,865	249,075	1,954,340	190,376

12.15 Producers' shipments of silver, by province, and total value, 1967-73

Year	Average price ¹ per oz t (Canadian funds) ¢	Province or territory					
		New- foundland oz t	Nova Scotia oz t	New Brunswick oz t	Quebec oz t	Ontario oz t	Manitoba oz t
1967	172.5	1,073,153	89,238	3,017,416	4,659,232	14,309,391	629,311
1968	231.1	895,706	368,389	3,654,079	3,986,371	21,844,592	616,954
1969	193.1	1,024,639	267,585	4,058,976	4,334,867	22,260,439	462,763
1970	185.1	793,402	71,668	4,577,956	4,261,959	19,876,430	660,755
1971	157.1	563,604	55,292	5,057,627	4,378,011	18,681,633	694,298
1972	167.1	572,928	7	3,906,470	3,558,027	19,587,694	808,376
1973	256.7	572,918	22,838	3,568,678	3,050,999	19,617,406	1,082,763

Year		Saskat- chewan oz t	British Columbia oz t	Yukon Territory oz t	Northwest Territories oz t	Canada Quantity oz t	Value \$'000
1967	172.5	605,215	6,082,617	3,869,374	1,980,228	36,315,189 ¹	62,898
1968	231.1	695,893	7,121,250	2,077,987	3,751,563	45,012,797 ¹	104,115
1969	193.1	649,699	5,760,534	2,685,060	2,026,367	43,530,941 ¹	84,015
1970	185.1	491,953	6,511,316	4,240,709	2,764,642	44,250,804 ¹	81,864
1971	157.1	238,763	7,674,186	5,747,703	2,932,446	46,023,570 ¹	71,797
1972	167.1	384,443	6,926,036	4,988,967	4,059,261	44,792,209	74,803
1973	256.7	458,241	7,619,413	6,073,973	5,420,344	47,487,589 ¹	119,954

¹Includes relatively small quantities produced in Alberta.**12.16 Quantity and value of producers' shipments of uranium (U₃O₈), by province, 1967-73**

Year	Ontario		Saskatchewan		Canada	
	Quantity '000 lb.	Value \$'000	Quantity '000 lb.	Value \$'000	Quantity '000 lb.	Value \$'000
1967	5,451	41,418	2,026	11,604	7,476	53,022
1968	5,361	39,164	2,041	13,121	7,402	52,285
1969	..	40,307	..	12,843	7,708	53,151
1970	6,677	..	1,532	..	8,209	..
1971	7,010	..	1,204	..	8,214	..
1972	8,428	..	1,335	..	9,763	..
1973	8,115	..	1,402	..	9,517	..

12.17 Quantity and value of producers' shipments of asbestos, 1967-73

Year	Quantity '000 tons	Value \$'000
1967	1,452	165,119
1968	1,596	185,025
1969	1,611	195,211
1970	1,662	208,147
1971	1,635	203,999
1972	1,687	206,089
1973	1,863	234,323

12.18 Producers' shipments of potash, 1967-73

Year	K ₂ O eq. '000 tons	Value \$'000
1967	2,383	67,395
1968	2,918	65,121
1969	3,492	69,383
1970	3,420	108,695
1971	4,000	134,955
1972	3,852	135,513
1973	4,909	176,876

12.19 Producers' shipments of salt, by province, and total value, 1967-73

Year	Nova Scotia '000 tons	Ontario '000 tons	Manitoba '000 tons	Saskatchewan '000 tons	Alberta '000 tons	Canada	
						Quantity '000 tons	Value \$'000
1967	447	4,673	25	90	126	5,361	27,808
1968	474	4,144	27	99	120	4,864	31,170
1969	501	3,760	43	107	247	4,658	30,406
1970	684	4,158	29	203	284	5,359	36,098
1971	889	4,171	27	209	245	5,542	40,111
1972	813	4,038	31	252	284	5,417	40,144
1973	752	4,162	36	285	330	5,565	49,631

12.20 Quantity and value of sulphur produced from smelter gases and in pyrite and pyrrhotite shipments, and of elemental sulphur sales, 1967-73

Year	Sulphur in smelter gases		Producers' shipments pyrite and pyrrhotite			Sales of elemental sulphur ¹	
	Quantity ² '000 tons	Value \$'000	Gross weight ³ '000 tons	Sulphur content '000 tons	Value \$'000	Quantity '000 tons	Value \$'000
1967	546	6,702	378	182	1,703	2,499	68,614
1968	666	8,915	314	156	2,286	2,581	79,964
1969	676	7,953	376	171	2,219	2,973	60,726
1970	706	7,433	363	176	1,699	3,548	28,354
1971	618	4,632	318	155	1,162	3,149	21,300
1972	679	5,118	126	60	456	3,636	19,588
1973	757	10,070	22	11 ^e	173	4,594	23,816

¹Recovered from sour natural gas and nickel sulphide ores.²Includes sulphur in acid made from roasting zinc sulphide concentrates at Arvida and Port Maitland.³Excludes pyrite and pyrrhotite used to produce iron residues or sinter.**12.21 Producers' shipments of gypsum, by province, and total value, 1967-73**

Year	Newfoundland '000 tons	Nova Scotia '000 tons	New Brunswick '000 tons	Ontario '000 tons	Manitoba '000 tons	British Columbia '000 tons	Canada	
							Quantity '000 tons	Value \$'000
1967	439	3,757	89	536	134	220	5,175	11,348
1968	435	4,441	85	571	152	243	5,927	11,825
1969	469	4,755	81	622	165	281	6,374	14,995
1970	491	4,775	73	537	172	270	6,319	14,199
1971	561	4,890	77	699	130	345	6,702	15,083
1972	735	5,999	75	726	176	388	8,099	19,336
1973	809	6,178	92	755	190	365	8,389	21,067

12.22 Production and exports of nepheline syenite, 1967-73

Year	Production		Exports	
	Quantity '000 tons	Value \$'000	Quantity '000 tons	Value \$'000
1967	402	4,753	308	3,532
1968	427	4,738	323	4,090
1969	501	5,935	396	5,120
1970	487	5,801	383	5,063
1971	517	6,206	410	5,333 ^r
1972	559	5,902	442 ^r	5,789 ^r
1973	569	7,860	449	6,101

12.23 Producers' shipments and value, imports, exports and apparent consumption of cement, 1967-73

Year	Shipments (sold or used)		Imports '000 tons	Exports ¹ '000 tons	Apparent consumption ² '000 tons
	'000 tons	\$'000			
1967	7,995	143,150	44	328	7,711
1968	8,166	152,004	52	367	7,851
1969	8,250	162,091	53	634	7,669
1970	7,946	155,740	97	567	7,477
1971	9,067	191,244	56	888	8,235
1972 ^r	10,039	210,685	43	1,299	8,783
1973	11,126	240,561	129	1,410	9,845

¹Standard portland cement.²Shipments plus imports less exports.

12.24 Producers' shipments of sand and gravel, by province, and total value, 1967-73

Year	Province or territory					
	New-foundland '000 tons	Prince Edward Island '000 tons	Nova Scotia '000 tons	New Brunswick '000 tons	Quebec '000 tons	Ontario '000 tons
1967	3,144	1,328	6,056	7,605	45,013	94,751
1968	3,812	383	9,380	6,362	42,956	84,096
1969	3,957	902	9,167	3,994	41,500	82,657
1970	4,335	827	7,187	6,883	36,795	82,877
1971	5,564	1,554	6,004	4,985	41,605	77,631
1972	5,433	1,578	9,896	7,561	44,993	76,380
1973	6,466	1,632	11,348	9,553	51,543	80,568
	Manitoba '000 tons	Saskatchewan '000 tons	Alberta '000 tons	British Columbia '000 tons	Canada Quantity '000 tons	Value \$'000
1967	10,289	9,671	14,187	23,168	215,213	146,698
1968	9,564	9,168	13,600	25,914	205,235	129,501
1969	8,142	7,673	14,904	28,685	201,581	122,159
1970	14,930	8,963	16,042	23,817	202,656	135,558
1971	16,695	11,321	18,679	29,253	213,291	152,628
1972	14,763	8,512	20,556	35,522	225,194	178,100
1973	12,782	6,836	18,607	34,126	233,461	213,437

12.25 Producers' shipments of stone¹, by province, and total value, 1967-73

Year	Province or territory					
	New-foundland '000 tons	Prince Edward Island '000 tons	Nova Scotia '000 tons	New Brunswick '000 tons	Quebec '000 tons	
1967	240	725	585	3,265	47,764	
1968	877	440	820	2,138	34,952	
1969	190	—	1,016	1,209	32,009	
1970	182	—	1,192	1,321	30,144	
1971	204	—	1,643	1,431	37,515	
1972	204	—	1,047	1,901	41,384	
1973	394	—	813	2,376	48,156	
	Ontario '000 tons	Manitoba '000 tons	Alberta '000 tons	British Columbia '000 tons	Canada Quantity '000 tons	Value \$'000
1967	25,745	2,013	142	3,528	84,007	103,888
1968	28,636	2,306	221	5,551	75,940	95,658
1969	27,035	699	315	5,006	67,477	88,186
1970	27,673	1,273	166	3,371	65,323	87,976
1971	28,238	1,012	184	3,287	73,515	96,537
1972	31,092	610	196	3,769	80,203	103,326
1973	35,539	625	161	3,830	91,894	127,579

¹Excludes limestone used in Canadian lime and cement industries.**12.26 Value (total sales) of producers' shipments of clay products made from domestic clays, by province, 1967-73 (thousand dollars)**

Year	Province or territory					
	New-foundland	Nova Scotia	New Brunswick	Quebec	Ontario	
1967	200	1,390	567	5,611	27,451	
1968	152	1,506	630	5,889	30,629	
1969	120	1,625	585	6,432	31,673	
1970	37	2,816	940	8,160	28,649	
1971 ^r	80	1,844	627	6,565	30,538	
1972 ^r	257	1,684	668	8,300	30,484	
1973	260	2,101	840	9,725	34,601	
	Manitoba	Saskatchewan	Alberta	British Columbia	Canada	
1967	526	1,158	4,117	3,336	44,357	
1968	451	1,455	4,425	3,585	48,721	
1969	346	1,718	4,640	4,027	51,166	
1970	346	1,819	4,657	4,367	51,791	
1971 ^r	469	1,140	4,031	4,900	50,194	
1972 ^r	667	1,758	4,438	4,301	52,557	
1973	1,257	2,014	4,782	5,590	61,170	

12.27 Quantity and value of production¹ of crude oil, by province, 1967-73

Year	Province or territory							
	New Brunswick		Ontario		Manitoba		Saskatchewan	
	Quantity '000 bbl	Value \$'000	Quantity '000 bbl	Value \$'000	Quantity '000 bbl	Value \$'000	Quantity '000 bbl	Value \$'000
1967	9	12	1,240	3,524	5,585	13,998	92,535	211,722
1968	8	11	1,151	3,167	6,205	15,570	91,889	206,943
1969	9	13	1,162	3,117	6,205	15,615	87,414	196,067
1970	10	14	1,048	2,840	5,908	14,858	89,487	199,770
1971	10	13	958	2,727	5,605	15,413	88,459	217,829
1972	9	12	878	2,499	5,257	14,588	86,787	214,057
1973	10	14	809	2,866	5,084	17,148	85,935	264,057
	Alberta		British Columbia		Northwest Territories		Canada	
	Quantity '000 bbl	Value \$'000	Quantity '000 bbl	Value \$'000	Quantity '000 bbl	Value \$'000	Quantity '000 bbl	Value \$'000
1967	231,543	591,710	19,697	44,841	678	871	351,288	866,678
1968	257,281	660,485	22,206	50,205	752	907	379,492	937,288
1969	290,012	740,435	25,387	58,357	801	967	410,990	1,014,571
1970	338,403	876,887	25,478	60,943	846	1,142	461,180	1,156,454
1971	371,501	1,055,769	25,263	63,984	944	1,208	492,739	1,356,943
1972	444,220	1,272,903	23,936	63,710	890	1,059	561,977	1,568,828
1973	541,736	1,894,724	21,316	65,643	963	2,240	655,853	2,246,692

¹ Gross production of crude oil and condensate, less returned to formation.

12.28 Natural gas production¹, by province and total value, 1967-73

Year	Province or territory									
	New Brunswick		Quebec		Ontario		Saskatchewan		Alberta	
	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000
1967	104	88	59	9	14,229	5,431	49,976	6,638	1,181,928	161,807
1968	113	97	138	21	12,066	4,599	56,772	7,211	1,367,682	186,034
1969	107	95	138	21	11,332	4,275	58,656	7,244	1,605,658	218,106
1970	131	108	166	25	17,064	6,488	62,594	7,332	1,870,507	265,912
1971	105	91	170	26	16,260	6,333	71,166	8,952	2,067,247	290,672
1972	97	57	187	26	12,375	4,768	68,912	8,932	2,385,440	338,709
1973	81	31	198	28	9,528	3,678	65,887	9,044	2,537,641	388,696
	British Columbia		Yukon Territory		Northwest Territories		Canada			
	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000
1967	225,399	23,993	—	—	41	17	1,471,735	197,983		
1968	259,867	27,869	—	—	43	18	1,696,680	225,848		
1969	301,998	32,573	—	—	44	18	1,977,932	262,332		
1970	326,565	35,200	—	—	82	35	2,277,109	315,100		
1971	342,909	36,269	869	90	298	117	2,499,024	342,549		
1972	432,132	43,043	2,600	279	11,795	1,372	2,913,537	397,186		
1973	469,253	46,052	—	—	36,873	4,324	3,119,461	451,853		

¹Gross production, less field-flared and waste and re-injected.

Sources

12.1 - 12.28 Minerals and Metals Division, Mineral Development Sector, Department of Energy, Mines and Resources.

Chapter 13

Energy

13.1 Energy supply and demand

Canada's energy needs are met by oil, natural gas, coal, uranium and electricity. In terms of primary energy consumption, the share of oil as an energy source is 44% while natural gas and coal account for 21% and 8%, respectively, with 7% of this total being used to produce electricity. About one third of total energy consumption is supplied in the form of electricity which, in turn, is produced from hydro, coal, oil, natural gas and nuclear energy sources. Although nuclear power accounts for little more than 1% of total supply, it will become increasingly important as a source of electric power. Hydro-electricity and the thermal generation of electricity from coal, while remaining significant, will decline in relative importance as nuclear power development increases and the use of natural gas and oil is gradually phased out. Notwithstanding these changes, oil and natural gas are still likely to account for over 60% of total primary energy consumption at the end of the century.

The role and relative importance of the several energy sources may also be viewed in terms of Canada's trade in energy commodities. As Table 13.1 illustrates, there was a marked change in the export-import balance in the 10-year period 1963-73, from a deficit of \$160.6 million in the value of energy in 1963, on a trade balance basis, to a surplus of \$1,095.8 million in 1973. In 1974 the first signs of a reversal of this trend became apparent as the decline in crude oil exports signalled that the energy trade surplus prevailing since 1969 would diminish rapidly within a few years.

Canada's primary energy demand increased at an average annual rate of 5.3% over the 15-year period 1960-74, while energy use per capita grew annually by 3.6%. The impact of higher energy prices and the increasing attention being given to energy conservation measures are expected to lower per capita growth to an annual average of about 3.2% during the remainder of this decade but the trends in energy supply and demand for each of the principal energy sources indicated in Tables 13.2 - 13.5 are expected to continue with little change.

Growth in oil usage and the related supply trends since 1963 are illustrated in Table 13.2. Production of crude oil and gas liquids almost tripled in the 10-year period to 1973; declines in production and exports became evident in 1974. The growth rate in domestic demand began to moderate toward the end of the year. The most notable trend in 1973-74 has been the decline in the export-import surplus from 370,000 to 193,000 barrels a day (b/d). This surplus is expected to disappear in 1975 or 1976.

The natural gas supply and demand situation is illustrated in Table 13.3. In the 10-year period to 1973, production of marketable pipeline gas and domestic demand almost tripled. In 1974 exports declined while domestic demand continued the growth rate of previous years. With no new export approvals given since 1970, and none planned, domestic demand growth will relate directly to the ability of the industry to increase supply from present producing areas pending the opening of new sources in frontier areas.

The coal supply and demand picture in Canada has changed considerably in recent years, as Table 13.4 shows. In the 10-year period to 1973, production more than doubled, but most of the increase occurred in the years 1970-73. Domestic demand grew throughout the period, reaching a peak in 1970. Despite a slight decline since that year there are indications of renewed growth in the near future. Imports increased steadily until 1970 and remained within a narrow range of the 1973 level followed by a decline in 1974 due to a tightening in US supply. The most pronounced change in the coal supply and demand balance was the export increase in the years 1970-73 which accompanied the production increase. Present trends point to a stabilization of imports, and demand increases in the domestic market. Exports are expected to grow but only to the extent that expanded production exceeds domestic needs.

Electric energy supply and demand (Table 13.5) shows a doubling in domestic demand over the period 1963-73 and indicates a continuation of this growth. Until 1968 exports remained close to the 1963 level and have since quadrupled while imports have not changed significantly since 1963. However, exports have remained less than 6% of total electrical generation. In 1963 thermal power based on coal, and to a lesser extent on oil and natural gas,

accounted for 15% of the total production with hydro-electric sources accounting for the remainder. By 1973 the thermal power share had risen to 25%. With increasing use of nuclear energy in thermal power plants, this upward trend will continue.

Total sales of secondary energy, i.e. for other uses than producing energy for sale, are apportioned as follows: 22% for residences and farms, 16% for commercial and institutional use, 33% for industry and 29% for transportation. However, each of the energy source components has its specialized markets. In the residential market oil and gas supply 80% of requirements and electricity, the rest. The commercial sector is supplied by oil and gas (75%) and the remainder by electricity. The energy used in transportation is essentially oil. In industry, oil and gas meet 63% of the energy demand, electricity 24% and coal 13%. The composition of the energy mix changes over time, with changing price and supply conditions, but no dramatic changes from this 1974 pattern are foreseen for the remainder of the decade.

Unusual circumstances made 1974 an eventful period in the management of the Canadian energy economy. The world oil price quadrupled. Oil reserves declined again as no new and readily accessible discoveries were reported. Prices for oil and natural gas in domestic and export markets were key issues. Exploration and development costs increased. Production was down slightly. Quadrupling oil prices, declining reserves and the increasing costs of exploration and development made 1974 an eventful period in the management of the energy economy. The changed circumstances involved export controls, export charges, import compensation, voluntary product price restraint, a single price for domestic production, the intervention of provincial marketing agencies, and the existence of an international energy agreement. Uranium and nuclear power required a new export policy, increased safeguards, and a searching appraisal of reserves. Coal became more important as a source of power. Electric power from hydro, oil, gas and nuclear sources faced vast expansion to meet future demand.

The government introduced several steps to adapt its energy policy to altered circumstances. To achieve greater self-reliance in oil there were short-term transportation measures and a long-term plan to extend the interprovincial pipeline system to Montreal.

A single price for crude oil for all Canadians after allowance for transportation differences was set. Measures were initiated to build a fiscal structure to ensure an equitable distribution of revenues among producers, consumers and governments and to leave the industry sufficient incentive to continue exploration and development. Others were designed to ensure that Canadian energy exports would be sold at competitive prices in the markets to which they were being delivered. An Energy Supply Allocation Board was created with the authority to allocate supplies in an emergency. A national petroleum corporation was set up to ensure, as far as possible, that the rate of development of Canadian petroleum resources would be in the national interest, and to negotiate abroad to secure imported oil on the best terms possible. Federal government assistance was proposed to expand the production of electricity based on nuclear sources and to facilitate a comprehensive interconnection of provincial utilities to ensure greater efficiency and security. An Office of Energy Research and Development was established to assess and co-ordinate activities. Assistance was offered to provinces to help complete an inventory of Canadian resources in uranium, coal, oil and natural gas and an Office of Energy Conservation was set up within the Department of Energy, Mines and Resources to develop and recommend a program of energy conservation and to co-ordinate efforts of agencies responsible for conservation.

13.2 Oil and gas

13.2.1 Reserves

Oil. At the end of 1974 Canada's proven reserves of recoverable conventional crude oil and natural gas liquids (propane, butanes and pentanes plus) amounted to 8.6 billion barrels (bbl), most of them in Alberta. The estimates do not include reserves attributed to the Athabasca tar sands or recently discovered reserves in frontier areas. Proven oil reserves showed a net decline for the fifth consecutive year and at current production levels were sufficient to supply oil for 11 years. Canada's ultimate potentially recoverable reserves, as estimated in 1973 by the Geological Survey of Canada, were placed at 99.2 billion bbl of oil and 782.9 trillion cu ft

(MMMMcf) of gas. These potential reserves include, in addition to amounts already produced and proven, amounts "yet to be discovered on the basis of geological predictions".

According to an appraisal of Alberta's oil sands completed in 1973 by the Alberta Energy Resources Conservation Board, the ultimate recoverable reserves of synthetic crude oil from all of Alberta's bituminous deposits amount to 250 billion bbl. Of this total, approximately 26.5 billion bbl is considered recoverable by open cast mining methods similar to those now in use at the Great Canadian Oil Sands Limited's plant near Fort McMurray. The bulk of the oil located in deeper formations will only be recovered by in situ thermal or other techniques still being developed.

Natural gas. Raw natural gas may vary widely in composition. In addition to the usually predominant methane, varying proportions of ethane, propane, butanes and pentanes plus may be present. Hydrogen sulphide may be so abundant as to be an important source of sulphur. After processing has removed the water content, hydrogen sulphide, pentanes plus and other petroleum gases, the marketable gas consists mainly of methane, some ethane and small amounts of propane and butanes. The heating value of the marketed gas averages about 1,000 Btu per cu ft of gas.

The most important use of natural gas is as a fuel for space and water heating. Domestically, it is finding increasing use as fuel in larger home appliances. In the industrial sector natural gas is used by the automobile, steel, metal-working, glass and food-processing industries and in metallurgical processing where its clean, easily controlled flow makes it possible to attain precise temperatures for rolling, shaping, drawing and tempering steel.

The constituents of natural gas have become major sources of feedstock for the petrochemical industry. Natural gas supplies the basic raw material for ammonia, plastics, synthetic rubber, insecticides, detergents, dyes and synthetic fibres such as nylon, orlon and terylene.

Canada's proven reserves of natural gas have been estimated at 134.5 MMMMcf of gas in place, most of it in the western provinces of Alberta and British Columbia. After deducting reservoir losses and processing shrinkage (much of the gas has a hydrogen sulphide content and therefore a high processing shrinkage), 80.1 MMMMcf is estimated as ultimately recoverable. Cumulative production to the end of 1974 was 23.4 MMMMcf, leaving 56.7 MMMMcf available to meet future demand. On the basis of 1974 production of marketable gas, the reserves-to-production ratio is 23.7 years. Gas reserves rose 6.6 MMMMcf in 1974 compared to a year earlier but included gas formerly considered uneconomic and was not attributable to new discoveries. All these new reserves are located in Alberta and have been added to the proven and recoverable category as a direct result of recent increases in Alberta wellhead and plant-gate gas prices.

13.2.2 Exploration and development

13.2.2.1 Oil

The level of exploratory drilling activity in the conventional producing areas of western Canada in 1974 was substantially below that of 1973. Preliminary estimates indicate that some 1,700 exploratory wells were drilled in 1974 compared with nearly 2,050 in 1973, a decline of nearly 20%. Exploratory drilling activity in the frontier area also declined considerably; 63 wells were drilled in 1974 in the Mackenzie Delta area, the Arctic islands and the east coast off-shore areas, 16 less than in 1973. Details of drilling activity by region appear in Table 13.6.

Western provinces. In spite of the Alberta incentive programs, exploratory drilling in 1974 decreased by 17% in number of wells drilled and resulted in no significant finds. The decline in exploratory drilling was offset by a 12% increase in development drilling, reflecting increased interest in the shallow gas fields of southeastern Alberta. The net decline in drilling activities in that province was therefore only 2%.

In Saskatchewan, 275 wells were drilled, 50% fewer than in 1973. Exploratory drilling decreased by 36% and development by 65% — a sharp decline attributable in part to industry uncertainty regarding government measures and incentives during 1974.

British Columbia registered a minor decline of 6.4%. Activity in Manitoba was nominal. No significant developments were indicated, but two joint government/industry programs were initiated.

Northern regions. Throughout the entire northern region drilling and exploration activity decreased in 1974. Well completions and footage drilled decreased by 35% and exploration expenditures for the region by 17%.

The \$281 million spent on this frontier in 1974 resulted in an important discovery at the Shell Niglintgak M-19 well drilled in the Mackenzie Delta. Data from this well put preliminary reserve estimates at 80 million bbl of oil and 1 MMMMcF of gas. Two other oil discoveries were recorded in the same area, Shell Kumak and Imperial Adgo. The full significance of these wells cannot be determined without additional drilling but they are considered highly encouraging. The industry is drilling specifically for oil in this area.

There were no indicated commercial discoveries in the Arctic islands in 1974 although a well on Cameron Island, Panarctic Bent Horn, had an encouraging show of oil. Successful development wells were drilled in the Drake Point and Hecla fields on Melville Island. Exploratory interest was moving from the eastern to the centre and western part of the Sverdrup basin with Elf Canada concentrating on Banks Island and Panarctic operating in the central basin. Because of the expensive and extreme logistical difficulties of Arctic island exploration Panarctic adopted a "diagnostic drilling" program. Only the larger structures indicated were to be probed during 1975 on the basis of available seismic data.

Eastern off-shore region. A total of 21 wells were drilled off-shore in 1974 compared to 31 completions in 1973. Only the wildcat drilled by the Eastcan group off Prince Edward Island showed oil traces. Further exploratory tests are likely in this area.

13.2.2.2 Gas

Exploration and development drilling for gas continued the upward trend of 1973 in the western provinces. Well completions rose by 16.4% over 1973 to 1,927 wells. Of these, 1,294 or 67% were development wells drilled in the shallow gas zones of southeastern Alberta, where the gas is a dry sweet commodity not requiring processing. Of the 375 exploratory wells drilled in the western provinces, 318 were in Alberta and 68% of these were shallow zone exploratory wells.

Mississippian gas discoveries at Morley, Willson Creek, Stolbert and Obed, all in west central Alberta, were considered the major finds in western Canada during the year. In the same province, a number of gas discoveries and successful extensions to existing fields occurred, particularly in the Peace River area.

In Saskatchewan exploratory activity was largely confined to gas prospects in the western part of the province. There was development drilling in the Hoosier-Dodsland, Lloydminster and Estevan-Steelman oil-producing areas and in the Hatton shallow gas area.

In British Columbia two discoveries in the Grissly fields south of Dawson Creek may prove to be important. Successful development and stepout drilling took place at a number of other localities.

Northern regions. Shell's Niglintgak M-19 oil and gas well, completed at 13,206 ft, penetrated five gas-bearing zones which tested at a rate of 15,900 thousand cu ft a day (Mcf/d). Four other zones were predominantly oil-bearing, flowing at rates of up to 1,650 b/d. The gas reserves of this strike are estimated to be 1 MMMMcF. Development of the Kugpik structure discovered in 1973, 55 miles north of Inuvik, commenced late in 1974. A stepout well was being drilled seaward of the original O-13 discovery. Most of the other delta activity was concentrated in development drilling of the Richards Island and the Beaufort Sea discoveries of the previous year. In the Arctic islands, activity centred on exploitation of earlier gas strikes at Drake Point, Hecla and King Christian. Panarctic were drilling from ice platforms off-shore at Drake Point and east of the Hecla field at the Chads Creek B-64 location. Initial depth of this well was to be 12,000 ft but was extended to 14,000 ft as a result of some interesting shows. On King Christian, in contrast to the earlier major gas find by Panarctic, Dome Petroleum experienced disappointing results with a lengthy and expensive test well, Dome Sutherland O-23. Interest in Banks Island prospects increased in 1974 when Columbia Gas drilled the Columbia Ikkaviktok M-64 and Panarctic moved in late in the season with the Castel Bay C-68 test. Previous wells have had interesting indications.

Eastern off-shore region. In east coast off-shore waters considerable excitement was generated by two gas discoveries on the Labrador shelf, Eastcan et al Bjarni and Eastcan et al

Gudrid. Again it would be premature to attempt to assess their ultimate importance, but they are classed as potentially of major significance. Valid reserve estimates will only be available after further delineation drilling in 1975 and subsequent seasons.

A gas-condensate discovery was made at Mobil et al Citnalta on the Scotian shelf northeast of Sable Island. Hudson's Bay Oil and Gas Co. Ltd.'s well East Point northeast of Prince Edward Island drilled in 1970, was tested during 1974 and yielded a moderate flow of natural gas.

13.2.3 Production

Oil. Production of Canadian crude oil and equivalent in 1974 declined by 6.4% or an average of 126,000 b/d from the 1973 record production of almost 2 million b/d. Exports of crude oil and equivalent to the United States dropped by 231,600 b/d which was partially offset by an increase in domestic demand.

In Alberta production of conventional crude oil was down by 68,000 b/d, synthetic crude oil by 5,000 b/d and pentanes plus by 7,000 b/d for a total decline of 80,000 b/d or 4.9%. Saskatchewan crude oil production decreased by 15.7% or 37,000 b/d. The severe cutback was mainly experienced in heavy and sour crude production. The US District II refineries, traditional consumers of these Saskatchewan crude types, considered them uncompetitive after the export tax was added to the posted price. British Columbia crude oil and equivalent production was reduced by 6,000 b/d to 55,000 b/d while Manitoba showed a decrease of 3,000 b/d to 11,000 b/d (Table 13.7).

Natural gas. Marketable gas production was 2.4 MMMMcf in 1974, about the same level as 1973. Alberta produced 82.5% of the supply and British Columbia and the territories 14.9%. Production in British Columbia and the Northwest Territories was adversely affected throughout 1974 by reservoir-water breakthrough. Damage caused by this development is expected to curtail production from these fields for the foreseeable future.

13.2.4 Transportation

Oil. Canadian oil moves to market through an intricate network of oil pipelines extending from the producing fields west to Sumas, BC, near Vancouver, and east to the Niagara area of Ontario. This network serves the Canadian refineries in British Columbia, Alberta, Saskatchewan, Manitoba and Ontario and US markets located in the Puget Sound, Mid-West, Chicago and upper New York state areas. In 1973 the mileage of the entire pipeline system was 18,733 miles.

Prime components of this system are the trunk lines of the Interprovincial Pipe Line Company and the Trans Mountain Oil Pipe Line Company. Both pipelines start in Edmonton, Alta. and are fed by a network of gathering lines which transport oil to the main trunk lines. Interprovincial receives oil from the Hardisty fields, 100 miles southeast of Edmonton; from the Lloydminster heavy asphaltic crude field which provides a blend of pentanes plus and crude; and, through the Bow River Pipe Line Ltd., oil from the most southerly fields in the province. At Edson, approximately 100 miles west of Edmonton on the Trans Mountain pipeline, an interconnection with the Peace River pipeline brings oil from fields in northwestern Alberta.

The other prime mover of oil from Alberta, the Aurora pipeline, with a length of only one mile within Canada, receives 100,000 b/d of crude oil and equivalent from the Rangeland gathering system and moves it to Billings, Montana, both for refining and further shipment to points in the US mid-west.

Outside Alberta, the Interprovincial pipeline receives and transports Saskatchewan and Manitoba crude oil production. The main gathering systems deliver a blend of crude oil and pentanes plus from the Lloydminster area to Kerrobert on the Interprovincial system. Southwest Saskatchewan crude oil joins the line at Regina and southeast Saskatchewan crude at Cromer, Man., the junction for delivery of southwestern Manitoba crude oil.

In British Columbia a gathering pipeline system carries crude over a distance of 500 miles from fields near Fort St. John to connect with the Trans Mountain system at Kamloops.

Interprovincial Pipe Line Company's system is Canada's largest oil pipeline. It incorporates a wholly-owned subsidiary in the US, Lakehead Pipe Line Company Incorporated, and in 1974 had a right-of-way of 2,747 miles accommodating 5,350 miles of

main pipeline, of which 2,790 miles are in Canada. In 1974 the system received 1,277,301 b/d and delivered 1,275,474 b/d, most of it in the form of crude oil. Domestic refiners received 526,993 b/d of this throughput, the remainder was delivered in the US.

Trans Mountain Oil Pipe Line Company owns and operates a pipeline system for transporting crude and natural gas liquids from Edmonton and other points in Alberta and British Columbia to Burnaby, BC, and a subsidiary operates branch lines to refineries in the state of Washington. The 24-inch main line is 723 miles long including a spur line to the US boundary near Sumas, BC. The Company operates 20 pumping stations of which 18 are located in Canada. The present main line's sustainable capacity is over 410,000 b/d. Nine refineries are now connected to Trans Mountain, five in British Columbia and four in the state of Washington. In 1974 Trans Mountain built additional crude oil loading facilities in Vancouver to load tankers delivering oil to eastern Canada via the Panama Canal.

The Montreal refining centre is served by a pipeline from tidewater at Portland, Maine, the nearest port on the Atlantic seaboard from which tanker-borne crude oil from Venezuela, the Middle East and Africa may be trans-shipped by pipeline to Montreal. This joint system of the Montreal Pipe Line Company and its wholly-owned subsidiary in the US, Portland Pipe Line Corporation, shortens tanker voyages as it bypasses the seaboard of the Maritime provinces, the Gulf of St. Lawrence and the St. Lawrence River segments. However, there are excellent deepwater port sites in the Atlantic region and on the St. Lawrence which are now being considered for development as tanker terminals to provide pipeline routes within Canadian territory to Montreal. The Portland-Montreal system consists of 236 miles of right-of-way and 708 miles of main pipeline. In 1974, 467,746 b/d of crude oil went through the system.

The oil embargo of the winter of 1973 coupled with frequent price increases of off-shore oil, led the federal government to decide on a policy of an all-Canadian coast-to-coast pipeline network for security of supply, self-reliance in oil and oil products and to further economic development throughout the country. As phase one of this network the government has decided to extend the existing Interprovincial pipeline system from Sarnia to Montreal to provide consumers in eastern Ontario and western Quebec with access to more secure domestic supplies of western Canadian crude oil. Under the present schedule of construction, crude oil is expected to be flowing through the line to Montreal by the winter of 1976-77. The 30-inch line would have an initial capacity of 250,000 b/d and fully powered capacity of 650,000 bbl.

Natural gas. The authorization of large-volume gas removal from British Columbia and Alberta beginning in the mid-1950s, led to the construction of the first major gas transmission lines in Canada. Today, the complete system serves the major Canadian centres of population from Vancouver to Montreal and transports gas to the international border for US markets ranging from California to New England. The next expansion of the system will be directed to opening up Arctic gas resources. The initial economic, engineering and environmental studies for a Mackenzie Valley gas pipeline were completed in 1973 and an application was filed before Canadian and US regulatory authorities in the spring of 1974 for authorization and approvals to own and operate the pipeline. Research is also being carried out into the feasibility of transporting natural gas from the Arctic islands.

Most Canadian natural gas now produced must be processed before it can be considered marketable. Gathering lines take raw gas from the producing wells to a collection point on a transmission system or to the inlet of a gas processing plant. Main transmission systems receive marketable gas from field gathering lines or plants and transport it through trunk lines to Canadian distribution companies or to interconnected US transmission pipelines at the international border. Distribution systems serve the ultimate customers in the centres of population. With the introduction of PVC (polyvinylchloride) small-diameter pipe, distribution companies — especially in the western provinces — have been rapidly extending their service to rural customers by means of this easily laid durable pipe. At the end of 1973, a total of 70,657 miles of pipeline were in operation, of which 8,064 miles were gathering, 24,505 miles were transmission and 38,088 were distribution.

Unlike an oil pipeline company, which is a common carrier transporting oil for a fixed charge, a gas transmission pipeline company either owns the gas it transports or is a subsidiary

of the company purchasing the gas at source. The principal exception is the Alberta Gas Trunk Line Company Limited which delivers virtually all of the gas removed from Alberta to the main transmission companies at the provincial boundary.

The system of TransCanada Pipelines Limited begins at the Alberta border near Burstall, Sask., where it receives from Alberta Gas Trunk Line the gas it has purchased in Alberta. It receives gas from four Saskatchewan locations before passing south of Regina to a point south of Winnipeg where it branches into two lines. The original line goes eastward to Thunder Bay, North Bay and south to Toronto. At Toronto this line again divides with the westward branch serving the Hamilton area as well as delivering gas to the US at the Niagara Falls border crossing; the eastward branch follows the Lake Ontario shore and the St. Lawrence River to Montreal before terminating at Philipsburg on the international border. A number of lateral lines extending from the main transmission line serve communities along this route. The second line from Winnipeg goes south to the border at Emerson where it connects with the Great Lakes Transmission Company system, a company jointly owned by TransCanada and an American company. This pipeline follows a route south of Lake Superior, crosses the Straits of Mackinac to the lower Michigan peninsula where it swings south, then east to reconnect with the TransCanada system at Sarnia, Ont. The TransCanada system is Canada's longest pipeline, operating 5,678 miles of line in 1974 through which it delivered 1,097 MMMcf of gas. The US market took 23.1%, the balance being sold in Saskatchewan, Manitoba, Ontario and Quebec. Ontario accounted for the greatest volume of sales: 688 MMMcf or 62.7% of the total. During the year, TransCanada Pipelines Limited obtained approval for 60 miles of pipeline construction in loops along its system to improve reliability and increase flows.

The Westcoast Transmission Company Limited's large-diameter transmission line extends from Fort Nelson in the northeastern corner of British Columbia to Sumas on the BC-US border, near Vancouver. The system includes a number of lateral lines gathering gas from producing areas in BC, western Alberta and, the Pointed Mountain field in the Northwest Territories. In addition to serving Vancouver and communities along its route, Westcoast delivers gas to Pacific Northern Gas Ltd., a distribution company serving communities and industries along a 500-mile route between the Westcoast mainline at Summit Lake and the Pacific coast communities of Prince Rupert and Kitimat. It also supplies Inland Natural Gas Co. which operates an extensive distribution system serving communities in southern and central British Columbia. Westcoast's export sales are made to the El Paso Natural Gas Company for distribution in the Pacific Northwest region of the US. Westcoast operated 2,175 miles of pipeline with total sales in 1974 of 364 MMMcf. British Columbia took 125 MMMcf and the remaining 65.6% was sold to the US. During the year, the BC government acquired a 13.3% interest in Westcoast Transmission and the company was guaranteed a rate of return as a carrier but the British Columbia Power Corporation took over all the gas purchasing functions of the company.

The Alberta Gas Trunk Line Company Limited transports most of Alberta's export gas from the producing fields to the provincial boundaries where it is delivered to a large interprovincial transmission pipeline. Its two main segments are the Foothills Division and the Plains Division. The former transports gas for the Alberta Natural Gas, Alberta and Southern, and Westcoast Transmission systems; the latter for TransCanada and Consolidated pipelines. In the northwest of the province a smaller system, the Northern Division, delivers gas to the main Westcoast Transmission trunk line. The system operated 4,314 miles of pipeline in 1974 with daily average receipts of 4.6 MMMcf.

Usually, natural gas pipeline systems confine their activities to either gathering in the field, transmission, or distributing to ultimate customers. However several large systems combine elements of all three. In Alberta integrated companies like Canadian Western Natural Gas Company Limited and Northwestern Utilities Limited serve their customers from field to ultimate user with a combined total of more than 10,276 miles of pipeline. Saskatchewan Power Corporation delivers all gas sold in that province through a 7,739-mile distribution and transmission system serving most of the populated areas. Northern and Central Gas Corporation Limited operates probably the most widespread distribution system in Canada by serving industries and communities close to the TransCanada pipeline between Winnipeg and Montreal. Two large utility companies serve the industrialized areas of southern Ontario:

Consumers' Gas Company operating in the Toronto area, the Niagara Peninsula and eastern Ontario, and Union Gas Limited serving southwestern Ontario.

A complete set of gas pipeline regulations was issued in 1974 by the National Energy Board and revised oil pipeline regulations are now being discussed with industry and other authorities. The Board's Rules of Practice and Procedure were amended to include additional requirements respecting Canadian content and environmental assessments.

Northern pipelines. Extensive exploration for oil and gas has been going on in the Canadian north and in frontier regions for many years. However, actual transportation and use of such gas from the North began to receive active consideration after the major discoveries in Prudhoe Bay, Alaska in 1968. Recognizing that similar discoveries might well be made in the Canadian Arctic, the Canadian government set up a Task Force on Northern Oil Development to advise on all regional and national matters relating to northern oil and gas development, transportation, marketing and research.

In August 1970 and June 1972 the federal government issued guidelines for construction and operation of northern pipelines which included preservation of the environment, prevention of pollution and thermal erosion, freedom of navigation, protection of the rights of northern residents, and training and employment of residents of the North.

On March 21, 1974, Canadian Arctic Gas Pipeline Ltd. (CAGPL) filed applications to construct and operate a natural gas pipeline from Alaska and the Mackenzie Delta to southern markets. Mr. Justice Thomas R. Berger, of the Supreme Court of British Columbia, was appointed by the Government of Canada to conduct an inquiry into the regional social, environmental and economic impact of the construction, operation and subsequent abandonment of the proposed Mackenzie Valley natural gas pipeline in the Yukon Territory and Northwest Territories. Preliminary hearings were held in the summer of 1974 at Yellowknife, Inuvik, Whitehorse and Ottawa to hear the views of the applicant and other interested parties. The formal inquiry opened at Yellowknife March 3, 1975. A report of the Commission's findings is expected in 1976. In the spring of 1974 a group of specialists was assembled by the federal government to assess the application for government departments and agencies, the hearings of the National Energy Board, the interested public, and the Commission of Inquiry.

Alberta Gas Trunk Line Co. Limited has proposed the Maple Leaf Project, an alternative plan to CAGPL, to transport Canadian gas from the Mackenzie Delta/Beaufort Sea area to the points of connection with the systems of Westcoast Transmission Company and Alberta Gas Trunk Line Company Limited in British Columbia and Alberta, respectively.

The Polar Gas Project, on which studies began in 1973, would build a natural gas transmission system from the Arctic islands to southern markets using a large diameter pipeline running east or west of Hudson's Bay to markets in eastern Canada. Applications for this undertaking are not expected until the late 1970s because of the research and engineering required to determine the feasibility of underwater crossings and to select the most suitable route to southern Canada.

13.2.5 Processing

Oil. Recent changes in energy prices and the reduction in exports have led to a significant change in the outlook for new refinery construction. Canada has a surplus of capacity and the prospect of a slower growth of demand. Table 13.8 gives details of existing and planned oil refinery capacity in Canada in 1974 with scheduled completion dates for new facilities. In addition, some expansion of existing refineries is already in progress. In 1974 Canada had 40 operating refineries with a total refining capacity at year-end of more than 2 million b/d. Refinery runs were about 1.8 million b/d; and net sales of products averaged 1.6 million b/d, representing a growth of 2.1% over 1973. Production of Canadian refineries is closely in balance with total market demand, although there is some interchange of individual products to and from the US. Both exports and imports were down from 1973.

In the past, the location and size of Canada's refineries were determined by the tendency to locate them close to centres of consumption. Thus approximately 58% of the total capacity is located within the populous regions of southern Ontario and Quebec. Ontario has two main refining centres, in Sarnia and south of Toronto; Quebec has the largest refining centre, in

Montreal, as well as a refinery in Quebec City. British Columbia has seven refineries most of them located close to Vancouver.

A more recent trend has been to increase the size of individual refineries to effect economies of scale. Although the average size of individual refineries is increasing all over Canada, this is particularly evident in Alberta, Saskatchewan and Manitoba. These provinces were previously served by a multiplicity of small refineries close to individual cities but many are now being phased out and replaced by two large refineries in Edmonton where they will be close to the main sources of crude in Alberta. They will be of optimum size and will confine any environmental problems to one area, thus facilitating pollution control. Saskatchewan will lose two small refineries, but a remaining one will be expanded.

A third factor influencing refinery location has been proximity to deepwater ports in cases where crude input is received by tanker. The economies now being obtained with very large tankers have stimulated the construction of large refineries in the Atlantic provinces, specifically at Saint John, NB, Point Tupper, NS, and Come By Chance, Nfld. All are located in areas of relatively low population density so that a major proportion of their output is either shipped inland or re-exported. Changes in international markets had a major impact on the "export" refineries in 1974, resulting in a marked decrease in product exports.

In 1974 Canadian refineries yielded an average 33% of motor gasoline, 33% of middle distillates including light heating oil, diesel oil and jet fuel and about 22% of heavy fuel oil. Other products included liquefied petroleum gas, petrochemical feedstocks, aviation gasoline, asphalt and lubricating oil. To meet the high yields of light products most refineries are equipped with a catalytic cracker and total installed cracking capacity in 1974 was equivalent to about 23% of the crude distillation capacity. Catalytic reforming amounted to about 15% of crude capacity. This process upgrades gasoline quality and also delivers aromatic petroleum chemical feedstocks. To meet the need for high quality low-sulphur distillates, hydrogen-treating plants have been installed totalling 36% of crude feed and it is common practice to hydrogen-treat most or all of the gas oil and light distillates. Six hydrocracking units have been installed in Canada capable of treating 5% of crude feed. This new process is of value in upgrading heavy fuels to middle distillates which have been in relatively short supply.

Canada's petrochemical complex will be significantly enlarged by the construction of the country's first "petrochemical refinery" at Sarnia, Ont. Scheduled to start production in 1978, the refinery will manufacture both fuel products and petrochemicals. New petrochemical plants will also be built in the area for further processing of the chemical products.

At Sarnia, three refineries are now integrated with nine petrochemical companies. The oil refineries supply petroleum gases, naphtha and aromatics to the chemical companies who convert them to a large number of intermediates as well as final products. Western Canadian natural gas is also piped into this complex. The intermediate products produced in these chemical plants include ethylene, propylene, butadiene, aromatics and ethylene oxide. Final products include carbon black, synthetic rubbers, detergent alkylates, polyethylene, polystyrene, polyvinylchloride, ammonia, fertilizers, petroleum additives and many others. Many of the joint products from the petrochemical plants are sold back directly to the refineries for blending into fuel products. Fuels are piped directly to the petrochemical plants for process heat and power requirements. Montreal and Edmonton are also major petrochemical centres but plants are distributed widely across Canada.

Canadian refineries are investing in environmental control and conservation equipment to meet new standards. Process cooling water has been minimized or abandoned entirely in favour of air cooling. Water effluent undergoes gravity separation and secondary processes such as air flotation, biological oxidation or filtration. Low sulphur fuels and dispersion from tall smoke stacks minimize the discharge of sulphur dioxide from process heaters. Increased emphasis on products designed to reduce pollution by the consumer has resulted in sulphur-free fuels and motor gasolines with reduced harmful emission levels.

The pioneer oil sands recovery plant at Fort McMurray includes refining equipment to semi-process the recovered bitumen to a synthetic crude oil. The second oil sands plant is now under construction by a new group of participants which include the federal, Alberta and Ontario governments, and further plants are planned. Research programs are being staffed up to develop improved techniques for the extraction and processing of this resource.

Natural gas. Processing capacity at the end of 1974 was 16.1 MMMcf a day, an increase of

only 0.3 MMMcf over 1973. This small increase — six small plants — reflects the fact that no new fields were discovered during 1974. No major plant has been commissioned since 1972. Plant output includes pipeline gas, propane, butanes, pentanes plus and sulphur.

13.2.6 Research and development

Technical advances to assure adequate sources of energy depend on research and development. On April 15, 1975, the federal government announced the establishment of the Canadian Energy Research Institute. Funded by the Department of Energy, Mines and Resources, the Alberta Department of Mining, Energy and Natural Resources and the private Energy Research Association, the Institute will be located at the University of Calgary. It will conduct research and analysis on alternative solutions to medium- and long-range energy problems, develop independent source data, and provide economic research. Creation of the Institute is a response to a growing demand for information on energy matters from both the private and the public sectors.

13.2.7 Marketing

Higher prices for petroleum products in both the domestic and export markets appeared to reduce sales below forecast levels in 1974. Net sales of petroleum products were estimated at 607 million bbl in 1974, up 5.2% from 577 million bbl a year earlier, but the rate of increase was below the 5.4% historical growth pattern over the past decade. Net sales of natural gas in Canada climbed 8% in the year but exports were down slightly. Canadian production of crude oil, including natural gas liquids, averaged 1,993,800 b/d, a decrease of 122,300 bbl from the daily average in 1973.

13.2.7.1 Oil

The National Energy Board's report on exportation of oil in October 1974 analyzed established reserves and the likelihood of new oil field discoveries, and reviewed the long-term demand for Canadian oil. The report forecast a decline in production from established oil fields starting in 1975 and continuing into the 1980s, when oil from frontier areas in the north and from the oil sands in Alberta should become available in significant amounts.

Faced with a demand for oil in 1982 that, on the basis of supply and demand trends, will result in an over-all national deficit of 200,000 b/d, the Board recommended that exports of crude oil and petroleum products be progressively reduced with minimum injury to those areas of the US now dependent on Canadian supplies. Subsequent action by government set a limit on exports of 800,000 b/d for the six months ended June 30, 1975, and talks were initiated with producing provinces to cut exports to 650,000 b/d on July 1. Market conditions in the US kept exports below the levels authorized.

The amount of oil that can be exported is computed annually, with a system of monthly licences in force to ensure that Canadian requirements are met. The formula fixes the annual amount of crude oil available for export in relation to the amount of oil that can be produced, Canadian demand, and a conservation factor estimated for that year. This has the effect of reducing oil exports progressively as the estimated period of self sufficiency decreases in the area of Canada served by oil of Canadian origin.

Exports of western Canadian crude to American markets peaked at 1.1 million b/d in 1973. In 1974 the daily average export had dropped to 890,000 b/d, a 21.7% decrease. This decline may be attributed to the Canadian export tax imposed during 1974, making Canadian crude a less attractive feedstock for US mid-west refiners and to reduced deliveries to Puget Sound refiners because part of the Trans Mountain Pipeline capacity was needed to move western crude to the seaboard for shipment to eastern Canada.

In the early 1970s export demand for Canadian refined products increased substantially largely because the demand for heavy fuel oil in the US northeast grew more than the refinery capacity of the region. The increased demand was primarily met by the two large new refineries at St-Romuald, Que. and Point Tupper, NS. The new refinery at Come By Chance, Nfld. built in 1972 was also designed to meet this market.

As a result of concern about future supplies, the National Energy Board imposed controls on the export of petroleum products in June 1973. Marketers are required to obtain annual export licences to which export ceilings are attached. The licensed amounts for 1974 were 2,164,000 bbl of motor gasoline, 9,362,000 bbl of middle distillates, 50,895,000 bbl of heavy

fuel oil for a total licensed export of 62,421,000 bbl. Actual product exports in 1974 were 43,000,000 bbl or approximately 70% of the authorized amount.

The Organization of Petroleum Exporting Countries (OPEC) quadrupled the price of oil in 18 months. In Canada the government announced a price freeze on crude oil at \$3.80/bbl in September 1973, and instituted voluntary price restraints on petroleum products. In January 1974, a First Ministers' Conference on Energy extended the price freeze on crude oil and the federal government announced important incentives to support half the capital cost of electrical interconnections and the first nuclear plant for each province in an effort to reduce eastern Canadian dependence on imported oil. At a further conference in March 1974 agreement was reached on a wellhead price for domestic petroleum of \$6.50/bbl until June 1975. The uniform price was maintained in eastern Canada by an oil import compensation program which subsidized the purchase of high-cost foreign oil by importing refineries. Oil import compensation totalled \$1,319 million for the period January 1, 1974 to March 31, 1975.

A shift in supply patterns was indicated by increased consumption of Canadian crude in 1974 at 346.3 million bbl, up 26.7% from 1972. Imports, displaced in the Montreal market by domestic crude, rose only 3.6% in this period. Venezuela has traditionally acted as the main supplier of oil imported into eastern Canada, but historical patterns were altered in the final quarter of 1974 when a larger share of import demand was taken up by crude oil from the Middle East. This trend is expected to continue, partly because of the decline in Venezuelan crude production and partly because east coast refineries purchase their feedstocks in the Middle East. The eastern refinery crude supply during 1974 was composed of 350,000 b/d from Venezuela, 422,000 b/d from the Middle East, 47,000 b/d from other foreign sources and 75,000 b/d from western Canada.

A new national oil policy was outlined in December 1973. It is concerned with the creation of a national market for Canadian oil; a pricing mechanism to provide sufficient incentives for development of oil resources; measures to ensure that any escalation in returns and revenues as a result of increased prices will be used in a manner conducive to security of supply and self-sufficiency; establishment of a publicly owned Canadian petroleum company to expedite exploration and development; early extension of a pipeline to serve Montreal and ultimately, as required, more eastern points; and intensification of research on oil sands technology to permit their full and rapid development.

To implement this policy the federal government announced that an all-Canadian, coast-to-coast pipeline network would be built. The first phase would be the construction of a 510-mile-long pipeline from Sarnia to Montreal to begin in 1975 with completion scheduled for the late fall of 1976. Hearings on the application by Interprovincial Pipe Line Ltd. to build the line were recessed in October 1974 to allow further study of the supply situation and the financial effects. The government and the company subsequently agreed on financial guarantees for the project. The proposed 30-inch pipeline would have an initial capacity of some 250,000 b/d and fully powered capacity of 650,000 b/d.

The voluntary restraint on petroleum product prices established in September 1973 was changed in May 1974 to permit an increase of ¼-cent a gallon on the basis of increased costs for marketing and refining. A further increase to reflect these non-crude costs was granted in February 1975, but competition held price rises to about 2 cents a gallon.

There have, however, been important changes in other aspects of the Canadian energy situation. Royalty and tax laws affecting the production of oil and gas and other mineral fuels have been changed substantially. The prices of other fuels and electricity have risen as a result of both the increase in oil prices and the high rates of inflation experienced in all industrialized countries. The success rate in finding additional resources of oil and gas in Canada and its territorial waters has been less than was hoped and the expected capital and operating costs associated with the exploration, development, production and transport of oil and gas from the oil sands and the Arctic areas have increased so substantially that serious questions are now being raised about the pace and the price at which such resources can be commercially developed.

Government innovations. In response to the major increase in international oil prices in the fall of 1973, Alberta announced its intention to set up a provincial marketing board through the Petroleum Marketing Act of January 1974 to control the production, marketing and

pricing of Alberta oil and gas. In the fall of 1973 Saskatchewan increased its volumetric royalty on crude oil and announced its intention to levy a royalty surcharge on prices in excess of a weighted average of \$3.10/bbl. A marketing bill similar to that of Alberta was also introduced late in 1973. The British Columbia Petroleum Corporation (BCPC) assumed most of the contracts of Westcoast Transmission and other BC gas carriers. Royalties on the small volumes of gas not under contract to BCPC were raised to approximately 25% up to 20¢ per thousand cubic feet (Mcf) and 50% on prices in excess of 20¢/Mcf.

Early in 1974 the provinces began to levy new and substantial royalties and other charges. Alberta introduced an incremental royalty averaging 65% of the increased price of old oil. This brought the average royalty on oil to 42% from 22%. Saskatchewan introduced a royalty equivalent to 100% of the increase in price. BC introduced new royalties on oil and announced that the BCPC would appropriate most of any increase in the price of gas. All of these additional levies on income of petroleum producers were charges of a kind that, under the then existing federal tax regime, would reduce federal income tax revenues. As a direct consequence of these actions, the federal share of production revenues would have fallen from 13% to 6% in the last nine months of 1974. In the same period provincial revenues would have risen from 31% to 42% of production income. A very low level of federal tax would have persisted in the years ahead. To overcome the erosion of the tax base implied by these changes in provincial royalties, the federal government introduced budgets in May and November of 1974 which made provincial royalty payments non-deductible for tax purposes.

Both the federal and provincial governments subsequently eased their tax and royalty positions to provide the industry with increased funds for exploration and development.

Legislation. In June 1975 a bill allowing the federal government to set the price of oil and gas domestically as well as in the export market and authorizing continuation of the oil import compensation program received Royal Assent despite lack of provincial agreement.

Marketing innovations. Crude oil produced in western Canada is purchased by refining and marketing companies, transported to refineries by pipeline and processed into petroleum products for market distribution, usually through the marketing outlets of the major refining companies. With increasing product availability in the late 1960s and early 1970s, refineries found it profitable to market increasing volumes through independent outlets in competition with their brand name dealers. Independent discount gas bars offered lower prices, less service and fewer promotional extras. Major oil companies have opened their own discount and self-service outlets to capture a share of this market. The "self-service" market innovation contemplates a buying public which shops for savings on petroleum products, and is one manifestation of the changes probably yet to occur because of sharply increased prices.

Other influences for change are the government's long-term program of energy conservation announced in 1974, the establishment of a National Petroleum Company, and government participation in the Syncrude project on terms which grant that consortium an "internationally oriented" price for its product. Other concessions were granted when the federal government joined Alberta and Ontario as participants with private industry in this development, which is seen as a commercial and technical venture on which future oil sands development will be based.

International Energy Agreement. In October 1974 Canada provisionally entered an agreement with 18 industrial countries to establish an International Energy Agency and undertake broad co-operation in energy matters. Parliament has yet to ratify the agreement which was still being discussed with provincial governments. Part of the agreed program involves emergency arrangements for sharing and conserving available oil supplies in the event of interruptions in the flow of oil from overseas.

Longer-term measures include national energy conservation programs aimed at reducing dependence on imported oil by the group as a whole in accordance with agreed annual targets. For 1975 the target reduction for the group is 2 million b/d below the levels predicted earlier for that year. Measures now under discussion include accelerated development of alternative sources of energy and co-operation in research and development. The over-all objective of the Agency is to reduce, through multilateral co-operation, the vulnerability of participating countries to changes in the price and availability of imported oil and thus offer some assurance of stability in world energy markets.

High on the list of priorities was a meeting between the importing countries of the Agency with members of OPEC and some of the less developed countries dependent on imported oil to reach broad agreement on energy supplies and prices.

Special facilities have been established for "recycling" surplus funds being accumulated by oil-exporting countries to make loans to oil-importing countries, both through the International Monetary Fund and the World Bank, and through special agencies and organizations of the oil-exporting countries. More recently, 24 of the major industrial countries have entered into a special "safety net" agreement to help finance one another on a large scale if they run into difficulties in financing their international deficits through normal channels. While the aggregate deficits of the industrial countries are very large — of the order of \$38 billion a year for the members of the Organization for Economic Co-operation and Development (OECD) — the real problems are most severe for the developing countries. For them the increased costs of fuel, food and fertilizer have involved not only severe financing problems but setbacks in real economic development.

13.2.7.2 Natural gas

Natural gas continued to be in heavy demand throughout 1974 both in Canada and in the export market. An estimated 2,455 MMMcf (billion cubic feet) of marketable natural gas were produced in Canada in 1974. Net sales in Canada at 1,329 MMMcf were 8% greater than the 1973 total of 1,229 MMMcf. Net sales increased in all provinces except Saskatchewan and British Columbia, where substantial reductions in the amounts used for thermal generation of electricity outweighed increases in other end-uses.

Local and provincial natural gas utility companies purchase gas from major gas pipeline companies and operate their own pipeline systems to supply the public. These companies, primarily active in the final distribution of gas, currently spend increasing amounts on exploration and production in western Canada because of climbing wellhead prices and projected shortfalls with respect to expanding demand.

Quebec had the highest growth rate (25%) of all the provinces, primarily because of the improved competitiveness of natural gas in relation to substantially higher oil prices in eastern Canada and the low penetration of gas in earlier years. Ontario remains the largest provincial market.

Commercial users recorded the highest rate of growth at 16%, compared with an increase of 12% for residential users and 4% for industrial users and electric utilities. When gas consumed by electric utilities is excluded, industrial consumption is estimated to have increased by 11%.

Net exports of natural gas to the US totalled 959 MMMcf for the year, a 6.7% decrease from the 1,028 MMMcf exported the previous year. This decrease was attributable to delivery problems in the Beaver River field in northern British Columbia. While there may be sufficient gas reserves in a field to satisfy customer demand for a period of time, declining pressures and other production factors may limit the rate at which the gas can be extracted and delivered to market. Such problems in the Beaver River field caused a shortfall in meeting contractual obligations of Westcoast Transmission Company Limited to customers in the Pacific Northwest region of the US.

The National Energy Board issued no new export licences in 1974. Two applications to export gas made in 1973 by Alberta and Southern Gas Company Ltd. and Canadian-Montana Pipe Line Company were deferred until further notice. In September 1974, Pan Alberta Gas Limited withdrew an export application made in 1973.

New export price. A hearing in the spring of 1974 into the pricing of Canadian natural gas being exported under existing licences led to the establishment of a uniform border price substantially above the prices then prevailing. Long-term licences to export gas cover about 1 MMMMcf a year (about 40% of Canadian production). At the 1974 hearing, existing export prices were found to be unrealistically low when compared with the greatly increased cost of fuel oil, the principal alternative to gas for residential, commercial and most industrial uses. The Board recommended that natural gas being exported to the US should be priced on the basis of a scarce, non-renewable natural resource; that initially a new export price of \$1 per thousand cubic feet (Mcf) be established; and that the price be increased progressively toward the commodity value. In supporting this recommendation, the government also endorsed the

principle of further price increases. In approving the new export price of \$1/Mcf, the government stipulated that additional export revenues thus generated should be paid to gas producers to encourage additional exploration and production. In British Columbia most of the additional revenue was paid to the British Columbia Petroleum Corporation.

In May 1975 the Minister of Energy, Mines and Resources announced increased export prices of natural gas at \$1.40/Mcf in August, and \$1.60/Mcf in November 1975.

Inquiry into natural gas supplies. Hearings on the supply, demand and delivery of Canadian natural gas were held in a number of cities in the gas producing and consuming areas of Canada starting in November 1974, and completed in March 1975. The National Energy Board released its report in July 1975.

Over the longer term it may be assumed that there will be a large and growing demand for natural gas in Canada at prices competitive with oil. Exploration in the Arctic areas and off the Labrador Coast has been more successful in finding large natural gas reserves than oil. The ability to use these resources to meet demands in the settled areas of Canada depends on the building of pipelines. A proposal to build a 48-inch gas pipeline from Prudhoe Bay in Alaska and the Mackenzie Delta in Canada to carry Alaskan gas to the US and to move Delta and Beaufort Sea gas to Canadian markets was placed before the National Energy Board in March 1974. An alternative proposal to build a 42-inch line from the Delta to carry only Canadian gas to the existing pipeline systems of Alberta and British Columbia was filed in the spring of 1975.

Construction of northern pipelines will make substantial supplies of gas available, but estimates indicate that costs of frontier gas will be higher than the current Canadian price or the "commodity value" of gas in terms of the present price of oil in Canada.

The Government of Canada has expressed the view that the price of natural gas in Canada should rise over a period of years to reflect a more competitive valuation with respect to oil, on a delivered energy equivalent basis. Phased increases in gas prices, to reflect such a "commodity value" with crude oil, were discussed by provincial and federal representatives for more than a year prior to the Energy Conference of April 1975. No price changes were announced at that time, but the federal government reiterated its earlier stand and discussions were to continue with the provinces.

13.3 Uranium and nuclear energy

Total western world energy requirements in 1990 are expected to be about 2.7 times those in 1970. The annual growth rate for energy of all kinds is forecast at 5%, for electric energy at 6%, and for energy provided by nuclear plants at rates varying from 32% in the earlier years to 13% in the later years. Nuclear energy's share of total world energy requirements is expected to increase from less than 1% in 1970 to about 21% in 1990, largely at the expense of coal but also partly as a substitute for natural gas in the North American market.

The market for uranium shifted early in 1974 from a surplus supply situation to one of tight supplies as several international producers curtailed marketing activities and nuclear programs accelerated because of the crisis in world oil. Prices recovered sufficiently to make exploration for uranium attractive and in January 1974 the government announced that Eldorado Nuclear Ltd., a Crown company, would carry out an exploration program over five years at a cost of up to \$15 million. Canadian producers were particularly successful in negotiating several major contracts in 1974 to bring total commitments made since 1966 to over 135,000 tons of uranium oxide, about 118,000 of which remains to be delivered.

This export demand and the need to meet domestic requirements resulted in the government's announcement of a new uranium policy in September 1974. Sufficient uranium must be reserved for domestic use to enable each nuclear power reactor which is either operating, committed for construction or planned for operation in the next 10 years to operate at an average annual capacity factor of 80% for 30 years from the start of the period, or in the case of reactors which are not yet in operation, for 30 years from their in-service dates. Current projections indicate an operational nuclear capacity of about 16,000 MW by 1984, requiring an immediate allocation of about 80,000 tons of uranium oxide for these reactors. Responsibility for this supply will be apportioned among mining companies according to their uranium resources relative to the total Canadian recoverable resources. A uranium resource appraisal group established within the Department of Energy, Mines and Resources is assessing

Canadian resources. Since these resources are earmarked for use over a 30-year period, resources recoverable at prices up to twice the current market price are being included in the assessment.

Utilities will be required to demonstrate that they are maintaining a contracted forward supply of nuclear fuel to enable each operating reactor to work at 80% of annual capacity for at least 15 years, or for reactors committed but not yet operating for 15 years from their in-service dates. Today 11,600 MW of nuclear capacity is operating or committed for construction in Canada. Including first-core requirements, the 15-year forward fuel supply for these reactors would require about 27,000 tons of uranium oxide.

To ensure that sufficient uranium is available for the Canadian nuclear program to reach its full potential, forward sales commitments by Canadian producers will be limited to 15 years with the last five years being conditional on the contract providing for renegotiation of price for the uranium to be supplied in those five years, and Canadian utilities having a right to recall a portion of this material should they be unable to maintain a contracted 15-year forward supply of fuel by other means.

Requiring utilities to maintain a 15-year supply of fuel together with the time restrictions on export contracts should provide continuity of supply to Canadian utilities for existing and committed stations and for those which may be committed for operation more than 10 years in the future. A mechanism assuring supply for those nuclear stations which may be committed for operation between seven (current lead time from commitment to operation of a nuclear unit) and 10 years in the future is provided by the government stockpile of uranium.

To further secure uranium supplies, the government stated in late 1974 that, unless specific exemption is granted by the regulating agencies, uranium must be processed to the most advanced form possible in Canada before it can be exported.

13.4 Coal

Canadian production of coal in 1974 was almost 23.3 million short tons valued at nearly \$270 million (Table 13.9). Production increased only slightly but dollar value rose 50% compared to the previous year. Production increased in all provinces with British Columbia posting the largest gain in terms of value. Extraction of coal in western Canada totalled 21.4 million short tons while the output of Nova Scotia and New Brunswick mines totalled 1.8 million tons. Imports from the US decreased markedly to 13.6 million short tons because of supply and transportation disruptions. As a result inventories of coal in 1974 declined by 1.6 million tons.

About 50% of production, or 11.5 million tons, were exported in 1974 with British Columbia and Alberta accounting for 68% and 28% respectively. Japan received 11 million tons or 95% of all exports. Spot shipments of coal were made to a growing list of countries including the US, France, Federal Republic of Germany, Denmark, Italy, Britain, South Korea and Chile.

Canada's coal industry serves two principal types of markets: the production of thermal power and the manufacture of coke for the steel industry. The use of coal for thermal power generation has a promising potential particularly in Alberta, Saskatchewan, Ontario and British Columbia. Virtually all of Canada's coking coal is exported and competes in the international market.

In 1974 approximately 8.2 million tons of coking coal was converted to coke. Imports from the US provided roughly 90% of the coking coal used with Canadian steel companies importing approximately 55% from captive mines in that country.

Coal used for thermal-electric power generation increased slightly to 17 million tons in 1974. Domestic coal, mainly subbituminous coal in Alberta and lignite in Saskatchewan, supplied roughly 9 million tons to local power stations. Bituminous coal is used in small quantities for thermal power generation in New Brunswick and Nova Scotia. Ontario Hydro imported the remainder used in the thermal power industry.

British Columbia. Within British Columbia coal mining is being conducted in the Crowsnest Pass region near the continental divide in the southeastern portion of the province.

Kaiser Resources Ltd., with two operating coal mines in the Crowsnest coal field, shipped about 4.9 million clean long tons of coking coal and 430,000 net tons of thermal coal in 1974.

Kaiser commenced a \$3.5 million expansion program to develop new recoverable reserves from a surface mine to boost production by about 250,000 long tons a year when development is completed in 1976. The company also reached an agreement with Japanese interests to conduct a joint exploration project on part of Kaiser's coal land holdings to determine coal reserves and to study the feasibility of bringing a second underground hydraulic mine into production at a rate of 1.5 million tons a year by the late 1970s.

The Fording mine near Elkford about 40 miles north of Kaiser Resources mines shipped an estimated 1.9 million long tons of clean coal. Fording signed an agreement in 1974 with Kaiser Resources under which Kaiser will provide hydraulic coal mining technology for an underground test program to be carried out by Fording on its Eagle Mountain area.

Byron Creek Collieries produced 200,000 tons of coal in their first year of production. Eventual mining capacity is set at 500,000 tons a year.

Alberta is Canada's leading coal-producing province, producing both subbituminous and bituminous coals. Subbituminous coal primarily suits electricity generation. Most bituminous coal is exported to Japan. Bituminous production declined slightly in 1974 to 3.6 million tons while subbituminous production rose to 5.6 million tons, up 14.8% from a year earlier.

Alberta continued to expand its subbituminous industry in 1974 to meet the demand for energy in the province. Thermal electric plants located close to coal mines can be expected following Alberta government recommendations calling for more coal-fired generation of electricity. Coal is already moving from mines to power sites at Wabamun Lake and the Forestburg area. At Wabamun Lake, 40 miles west of Edmonton, Calgary Power Ltd. operates two power plants on coal from two mines. The utility has contracted out the mining operations to Manalta Coal Ltd. The Highvale mine, newest in the province, plans expansion from the current level of 2.4 million to 6.5 million tons by 1978. Calgary Power is studying a 2,100-MW thermal plant for the Dodds-Round Hill area near Camrose.

Four mines produce coking coal in Alberta. The largest operator, McIntyre Porcupine Mines, Limited, near Grande Cache produced an estimated 1.4 million long tons of clean coal from its underground No. 2 mine and No. 8 and 9 surface mines. The chief markets for McIntyre's high quality coal include steel industry consumers in Japan, the United States and Canada. In 1974 the company furthered plans to expand its surface mining capability. During the year, the new No. 9 mine was brought into production to offset the depletion of reserves at the No. 8 mine.

During 1974 a strike at the Cardinal River Coal Ltd. near Luscar forced a four-month shutdown. The company is expanding its operations to deliver 1.5 million long tons annually to its Japanese customers. In 1974 the company was able to produce only 700,000 tons of coal.

Canmore Mines, Limited continued to export small quantities of semi-anthracite during 1974. Coleman Collieries Limited had reduced operations because of underground mining difficulties. As a result Coleman carried out pre-production stripping operations on its Tent Mountain No. 4 open-cut area scheduled for initial production in 1975.

Saskatchewan. In 1974 four lignite mines in the Estevan-Bienfait region of southern Saskatchewan produced about 3.8 million tons of lignite. Manitoba and Saskatchewan Coal Company (Limited) produced nearly 2.3 million tons from its Boundary Dam operation. Manalta Coal Ltd. accounted for the rest of the Saskatchewan production from its Utility and Klimax mines.

Lignite production generally is expanding to meet the growing requirements of the Saskatchewan Power Corporation. The Boundary Dam station at Estevan is the largest user of lignite. When the generating capacity of this station is increased from 582 MW to 882 MW by 1977, its coal consumption will increase to 4.5 million tons annually.

New Brunswick. In 1974 N.B. Coal Limited, a provincial Crown company, produced a total of 415,000 tons of coal from six surface mines within the Minto coal field. Approximately 180,000 tons went to pulp and paper mills in Quebec and the remainder was delivered to the NB Electric Power Commission's Grand Lake and Chatham power stations.

Nova Scotia. In Nova Scotia demand for both coking coal and thermal coal remained high. As a result the Cape Breton Development Corporation continued to make plans to expand production. In August 1974 the new DEVCO mine at Lingan started its first longwall operation and by mid-November was producing at a rate of about 15,000 tons of saleable coal a week.

The second longwall was scheduled to go into operation early in 1975 and the third by the middle of the year. DEVCO started on a new 600,000-ton-a-year mine in 1975 to replace the 99-year-old Princess Colliery. The new mine, to be called Prince Mine, will produce relatively high-sulphur coal for power generation, will employ over 300 miners and will initially use the room and pillar method of coal extraction. During 1974 construction began at the new DEVCO preparation plant at Grand Lake, located midway between the Lingan and No. 26 mines, which is expected to be operating by late 1976 and is designed to reduce the sulphur content of coal at a rate of 3.5 million tons a year.

Outlook for 1975. Strong demand for Canadian coking and thermal coal reflects expanding foreign requirements and projected growth of the domestic electric utility industry. Japanese steel companies could double imports from Canada in the next 10 years to approximately 25 million tons annually. Other countries are also interested in this resource, including Britain and the Federal Republic of Germany where steel interests sought Canadian coking coal. In 1974 the industry operated at its productive limits, a situation that was expected to continue as all indications are that demand will exceed supply for the near term. It is questionable whether additional capability can satisfy all available markets before the end of this decade. Problems facing Canada's coal industry include longer lead times for mine development, introduction of new and more stringent regulatory requirements, short supply and lengthening delivery times for mining and processing equipment, the need to upgrade transportation and terminal handling capacities, higher construction, development and operating costs, and even tighter supplies of skilled labour. Despite these problems, Canada's total coal production should reach 27 million tons in 1975. Of this amount 13 million will be exported primarily to Japan.

13.5 Electric power

13.5.1 Electric power development

Additions to generating capacity during 1974 raised the total installed capacity at year-end by 5.1% to 57,149 MW (megawatt = 1,000 kilowatts). The 2,773 MW added during the year included 2,246 MW of hydro-electric generation and 500 MW of conventional thermal generation together with some minor changes in gas turbine and internal combustion installations.

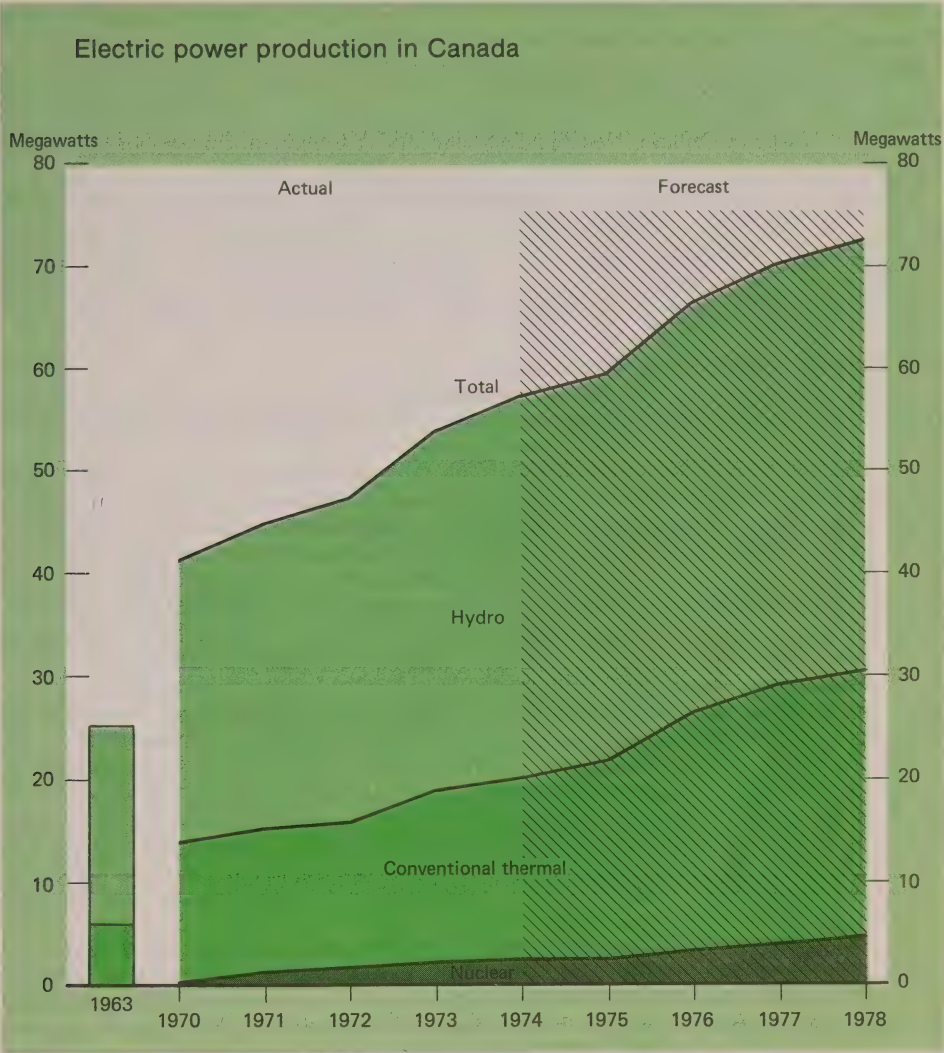
Hydro-electric installations provided 79.4% of new capacity added in 1974, compared with 40% in 1973, largely as a result of the completion of the final four 475-MW units at Churchill Falls which raised the installed capacity of that plant to 5,225 MW in 11 units. Other hydro additions included a 275-MW unit at the G.M. Shrum Station on the Peace River in British Columbia and the final three 102-MW units at the Kettle Station on the Nelson River in Manitoba.

Conventional thermal generation additions were primarily in Ontario where a fourth 500-MW unit was added at the coal-fired Nanticoke Station. There were no new nuclear additions in 1974.

Electric power generation in 1974, at 278,969 GWh (gigawatt-hours = millions of kilowatt-hours), was 6.4% above the previous year entirely as a result of increased generation from renewable hydro-electric sources. Hydro generation increased by 9% over 1973 to a total of 210,187 GWh and contributed 75.3% of total generation (73.6% in 1973). Non-nuclear generation was 0.2% lower and nuclear generation 2.5% below 1973.

Primary and secondary energy used in Canada increased 7.5% to 266,013 GWh, down from a growth of 7.9% a year earlier. The percentage increase exceeded that of the generation increase as a result of reduced exports. For the first nine months of 1974, growth in the general category under 5,000 kW, which included the former commercial category, increased by 9.5% and domestic and farm use grew by 10.4%. The general category over 5,000 kW and "energy used in own plant", both largely industrial users, grew by 3.5% and 4.3% respectively compared with the same period in 1973.

Exports of electricity to the US decreased nearly 9% to 15,398 GWh and net exports fell 12% to 12,957 GWh representing 4.6% of total generation for 1974. Most exports to the US occur during peak load periods of the summer, but sales were down in 1974 because of moderate weather conditions and the availability of more equipment in the US. Trade in



electricity is essentially an exchange of power, with Canada importing electricity during peak load periods in the winter.

13.5.2 Generating capacity

Power generating capability is the measurement of the available generating resources of all hydro and thermal facilities at the time of the one-hour firm peak load for each reporting company and is not equal to the installed capacity of such generating facilities. Electric energy generated in Canada during 1973 was equivalent to 55.3% of the amount which in theory could be generated if the total installed capacity at the end of the year were operating continuously. The balance reflects fluctuations in load below peak demand during daily and seasonal cycles together with reserves of generating capacity.

Total generating capability has grown at a rapid rate especially in the past few decades. The annual rate of increase was 7.9% in the period 1963-73 and 9.4% in the period 1969-73. In comparison, the forecast rate of growth for the years 1974-78 is 6.2%; thermal generating capability is expected to grow at an average rate of nearly 10% a year in the forecast period compared with 12.6% in the period 1963-73, and hydro-electric capability is expected to

increase at 3.8% a year compared with 6.1% in the 1963-74 period. This rate of growth in hydro generating capability in the forecast period is attributable to the large power projects under construction in relatively remote areas that will be completed within the next few years.

Among the provinces Ontario has the largest generating capability in all forms followed by Quebec, British Columbia and Newfoundland. Quebec has the largest hydro generation capability, followed by Ontario, Newfoundland and British Columbia. Ontario has the largest thermal generation capability, followed by Alberta and British Columbia.

The largest absolute growth in generating capability for the forecast years 1974-78 is indicated for Ontario at 7,348 MW, followed by British Columbia at 2,927 MW, Quebec at 1,998 MW and Newfoundland at 1,876 MW. Ontario will meet most of its increased generating capability by adding 5,052 MW in fossil-fuelled capability and 2,192 MW nuclear. British Columbia will add 2,673 MW hydro and 254 MW thermal, and Quebec 1,660 MW hydro and 338 MW thermal.

13.5.3 Hydro-electric power generation

Hydro-electric generation forms a significant though decreasing part in Canada's electrical development. By the end of 1974, the hydro portion of the country's total generating capacity had fallen to 63.9% from over 90%, 20 years earlier.

In view of the vast water resources existing throughout Canada, it would appear that many undeveloped sites could be potential sources of hydro-electric power. It cannot, however, be assumed that all these possibilities represent economically viable sources of electric power. In fact, only a fraction of the sites with a theoretical power potential can actually be developed competitively. Before a site can be termed a source of potential power, a detailed analysis of such factors as cost, geography, geology and ecology must be performed. Until such a study is completed on a national scale, estimates of Canada's undeveloped water-power resources (recently estimated to be in excess of 60,000 MW), may be misleading.

Figures of water-power resources already developed are given in Table 13.10 and are based on the manufacturer's rating in kilowatts as shown on the generator nameplate, or derived from the electrical rating. The maximum economic installation at a power site can be determined only by careful consideration of all the conditions and circumstances pertinent to its individual development. It is normal practice to install units having a combined capacity in excess of the available continuous power at Q50 (flow available 50% of the time), and frequently in excess of the power available at Qm (arithmetical mean flow). There are a number of reasons for this. Excess capacity may be installed for use at peak-load periods, to take advantage of periods of high flow, or to facilitate plant or system maintenance. In some instances, storage dams have been built after initial development to smooth out fluctuations in river flows. In other cases, deficiencies in power output during periods of low flow have been offset by auxiliary power supplied from thermal plants, or by interconnection with other plants operating under different load conditions or located on rivers with different flow characteristics. The extent to which installed capacity exceeds the available continuous power at various rates of flow depends on factors that govern the system or plant operation, and varies widely from one area to another.

The distribution of installed hydro-electric generating capacity given in Table 13.10 reveals that substantial amounts of water power have been developed in all provinces and territories except Prince Edward Island. As natural-resource development proceeds, the fortunate incidence of water power in proximity to mineral, forest and other resources becomes increasingly apparent. The existence of large amounts of potential hydro power on northern rivers may well prove to be a factor of prime importance in the eventual realization of the natural wealth of the Canadian north.

The water-power resources of Nova Scotia and New Brunswick, although small in comparison with those of other provinces, are a valuable source of energy and make a substantial contribution to the economies of the two provinces. Numerous rivers provide moderate-sized power sites either within economic transmission distance of the principal cities and towns or advantageously situated for use in development of the timber and mineral resources. These provinces have, however, turned to thermal generation, initially coal-fired with a subsequent shift to oil. Plans are now well advanced for development of nuclear generation in New Brunswick and there have been recent indications of a possible return to coal as a fuel source for new installations.

13.5.4 Thermal power generation

The incidence of immense water-power resources in Canada and the brisk pace of their development has tended to overshadow the very considerable contribution being made by thermal energy in the nation's power economy. For a modest 133 MW of generating capacity installed at the end of 1900, Canada's installed hydro capacity rose to 36,512 MW by the end of 1974 and thermal capacity to 20,637 MW (Table 13.10).

The same table shows that thermal generation is predominant in Prince Edward Island and Nova Scotia. By the end of 1971, the Yukon Territory had joined the Northwest Territories, Alberta, Saskatchewan and Ontario in having more than half their total capacity thermal-electric. Thermal generation is expected to become increasingly predominant in Ontario. Although coal is still the most important fossil fuel for thermal plants in Nova Scotia, oil is the preferred choice for new thermal power generation in the other Atlantic provinces.

Over 90% of all thermal power generating equipment in Canada is driven by steam turbines fired by coal, oil or gas. The magnitude of loads carried by steam plants combined with the economies of scale has led to the installation of steam units with capacities as high as 540 MW, and units in the 800-MW size range have been committed for as early as 1976. Additions of these larger units are, however, only possible where systems are large enough to accommodate them. Additional types of thermal generation are provided by gas turbine and internal combustion equipment. The flexibility of internal combustion engines makes this type of equipment particularly suitable for meeting power loads in smaller centres, especially in the more isolated areas. Gas turbines are frequently used for peak loads where their rapid start-up ability and minimal capital cost are manifest advantages.

After World War II, industrial expansion and rapidly growing residential and agricultural development placed extremely heavy demands on power generating facilities. Since hydro sources alone could not possibly satisfy this demand an extensive program of thermal plant construction began in the early 1950s; by 1956 thermal capacity represented 15% of the total. Since then, the annual installed capacity has averaged 56% hydro-electric with the remainder in thermal generation. At the end of 1974 thermal capacity accounted for 36.1% of Canada's installed capacity.

Thermal plants accounted for only 24.7% of total generation in 1974 because much of the capacity installed is operated for peak load duty only, with hydro-electric capacity providing base-load generation. This pattern will change with the introduction of additional nuclear-fuelled thermal generation plants which can operate economically at high capacity for base-load purposes.

Nuclear thermal power. Commercial electric power generated from the heat of nuclear reaction became a reality in Canada in 1962 when the 20-MW Nuclear Power Demonstration (NPD) station at Rolphton, Ont., fed power for the first time into a distribution system in Ontario. The NPD station was a forerunner of a series of large nuclear stations that will shoulder more and more of Canada's rapidly growing power loads.

Atomic Energy of Canada Limited, a federal Crown company incorporated in 1952, has concentrated its efforts on the development of the CANDU reactor. The Canadian CANDU (CANada-Deuterium-Uranium) power reactor uses heavy water (deuterium oxide) as a moderator for slowing or "moderating" the neutrons released by nuclear fission. The high neutron economy obtained by using this moderator with neutron-transparent core materials (zirconium alloys) means that Canada's abundant resources of natural uranium may be used as fuel. The CANDU system is however, sufficiently flexible that enriched uranium, plutonium recovered from spent fuel, or thorium may be incorporated into its fuel system.

The production of heavy water has been a critical item in the Canadian nuclear power program. The first 800-ton-a-year heavy water production plant at Ontario Hydro's Bruce Nuclear Power Development on Lake Huron went into operation in 1973 and is producing at over 80% of its design capacity. Ontario Hydro is now building the first of three additional plants at the Bruce site which it announced in 1973. In Nova Scotia rehabilitation of the Glace Bay plant continued with start-up scheduled for 1975, and operation of the Canadian General Electric Port Hawkesbury plant was considerably improved after modifications. AECL negotiated the purchase of this plant from CGE in 1974. Construction is continuing on the new 800-ton-a-year plant of AECL at the Gentilly site in Quebec.

At Douglas Point on the shore of Lake Huron, the country's first full-scale nuclear power station went into operation in 1966. The station, built with the co-operation of Ontario Hydro, houses a 220-MW CANDU reactor. Experience gained in the design and operation of the NPD and Douglas Point reactors encouraged and contributed to the development of larger units. Construction of the 2,160-MW Pickering nuclear station near Toronto is now complete; two of the station's four units came on line in 1971 and units 3 and 4 produced their first electricity, ahead of schedule, in 1972 and 1973. All four units have performed exceptionally well with capacity factors in 1973 ranging from 70% to 93%, for an average of 83.4%. Work on the Bruce nuclear station for Ontario Hydro is proceeding on schedule with four 800-MW units planned for installation from 1975 to 1978. In addition, a duplicate of the Pickering station, at the same site, has been committed and Hydro-Québec and New Brunswick Electric Power Commission have started construction of 600-MW CANDU stations at Gentilly and at Point LePreau.

A further step in the development of the CANDU reactor is the use of boiling light water instead of pressurized heavy water as the coolant. The initial Gentilly nuclear power station (Gentilly I) utilizes boiling light water in its CANDU reactor; this station came into service in 1971 with 266 MW of nuclear-electric capacity.

13.5.5 Load demand and electric energy use

Firm power peak load is the measure of the maximum average net kilowatt demand of one-hour duration from all loads, including commercial, residential, farm and industrial consumers as well as the line losses. Such load demand increased at the rate of 7.5% a year from 1963 to 1973 and 7.4% a year from 1969 to 1973; peak load demand is forecast to increase at the average rate of 7.3% a year in the period 1974-78. As a result of the rapid increase in generating capability and the somewhat slower but steady increase in the peak loads, together with the slight reduction in deliveries of firm power to the United States, the indicated reserve on net capability in the 1961-73 period increased each year except 1961, 1963, 1964, 1966 and 1972. The reserve ratio as a percentage of firm power peak load reached a high of 28.2% in 1960 and fell to 13.7% in 1968 but is expected to increase to 18.7% in 1978. Absolute figures are given in Table 13.11.

As indicated in Table 13.12, total electric energy consumed in Canada during 1973, after losses of 9%, showed industrial loads at 54% down sharply from 67% in 1950; farm consumption at 21%, up from 13% in 1950; and commercial consumption had climbed to 16% in 1973, the latest year for which statistics were available, up from 11% from 1950.

While availability of electric energy at reasonable cost is an important element in Canada's industrial growth, in only a few industries is the cost of electric power a key element in economic competitiveness. Energy distribution for industry can be subdivided approximately as follows: one third to the mineral industry (including smelting and refining), one quarter to the pulp and paper industry, one tenth to chemical manufacturing and the remaining portion to all other industrial categories.

The growth among non-industrial customers results from a greater reliance by Canada's population on facilities powered by electricity. Tremendous quantities of electric energy are required, for example, to meet rapidly escalating demands for heating, cooling, lighting, transportation, elevators, electrical appliances and farm machinery. The shift of population from rural areas to cities and towns, where electrical demand is greatest, has also contributed to this growth.

Details of the provincial pattern of electric energy use can be seen in Table 13.13. Of total energy made available in Canada during 1973 more than two thirds was consumed in Ontario and Quebec with all other regions accounting for the remaining one third. The share of total consumption by these other regions has, however, been rising (combined total of 26% in 1960 as against 33% in 1973) and has remained constant in Ontario at 34%. The actual portion of total energy consumed by industry in 1973 ranged from a high of 60% in British Columbia, to a low of 47% in the Prairie region. Domestic and farm consumption remains greatest in the Prairie provinces and Ontario but for different reasons. In Ontario, where the majority of people are urban dwellers, high demand from the large cities accounts for the higher level, while in the Prairies it results from a substantial farming load combined with a normal level of domestic usage.

Part of Canada's growing need for electric power reflects a growth in population but per capita consumption increased 6.6% to 11,300 kWh in 1973, up more than 85% since 1960. The Atlantic provinces experienced the largest increase, 212% to 8,100 kWh per capita, followed closely by the Prairie provinces with 184% to 8,800 kWh. The lowest over the period was in Quebec with only a 57% increase to 13,500 kWh per capita but the level was already very high. British Columbia recorded the highest per capita consumption in 1973, 14,400 kWh. Table 13.14 sets out details of this per capita consumption by region.

13.5.6 Electric power transmission

The nature of the loads handled by small, widely scattered generating systems in the early days of the electric power industry did not warrant the expense of interconnecting power systems. However, as the demand for dependable electric power increased and improved techniques reduced power transmission costs, the benefits of integrating power systems to achieve reliability of service and flexibility of operation were reappraised. Today, most of Canada's generating stations are components of large, integrated, and often interconnected, power systems operated by power utilities in the various provinces.

Research in the field of power transmission has developed techniques that enable power producers to utilize hydro-electric sites previously considered beyond economic transmission distances. Most noticeable, perhaps, is the progressive stepping-up of transmission-line voltages. In Canada, there are a number of transmission lines designed for operation at 500 kilovolts (kV) and 735 kV. A 574-mile, 500-kV line is in service to carry power from the Peace River to the lower mainland of British Columbia. In Ontario, a 435-mile, 500-kV line carries power from hydro-electric plants in the James Bay watershed to Toronto. In 1965 Hydro-Québec achieved world leadership when power was carried for the first time at 735 kV over the 375-mile transmission line linking Quebec's Manicouagan-Outardes hydro complex with the urban demand centres of Quebec and Montreal. By the end of 1971, the initial program for 1,228 miles of the 735-kV line had been completed, and three 735-kV circuits connecting the Churchill Falls generation station to the Hydro-Québec grid are now in service.

Most power is transmitted as alternating current but three applications of high-voltage direct-current (HVDC) are found in Canada. In service in British Columbia is a 260-kV HVDC link from the mainland to Vancouver Island. This facility has a capacity of 312 MW and includes 21 miles of undersea cable; it is a monopolar system using the ground as the return path for current. It is being expanded to 624 MW for an in-service date of 1976. A 450-kV HVDC system was placed in service in 1973 linking the Kettle generation station on the Nelson River to Winnipeg where two 555-mile lines have been completed and converter equipment with an initial capacity of 810 MW is in service. The planned ultimate rating of this system is 3,200 MW. Another application designed to provide a non-synchronous tie between the power systems of New Brunswick and Quebec is a 320-MW back-to-back HVDC system located at Eel River, NB. This facility was placed in service in 1972 employing solid state thyristor valves in place of the mercury arc valves used for the earlier-committed HVDC systems in British Columbia and Manitoba.

Interconnections of 66 kV and 138 kV already exist between British Columbia and Alberta and a 230-kV tie is being planned. Saskatchewan, Manitoba, Ontario and portions of the Quebec system are interconnected and, through the Ontario Hydro system, are linked with northeastern United States systems. Quebec, New Brunswick and Nova Scotia systems are interconnected. The first major international tie connecting regions of the Maritimes in Canada with the United States became a reality during 1970 on completion of a 345-kV link between the New Brunswick and Maine systems. British Columbia has an international tie with the Pacific Northwest (500 kV) and a 230-kV link between Manitoba and the United States was completed in 1970.

The search for economies in transmission systems has led to changes not only in materials used but also in tower erection and cable-stringing methods. Guyed V-shaped and Y-shaped transmission towers are being used increasingly in place of self-supporting towers where the terrain is suitable, and erection costs are being reduced by the use of helicopters to transport tower sections to the site for assembly.

13.5.7 Electric utilities

Federal government regulation of electric utilities with respect to the export of electric

power and the construction of lines over which such power is exported falls within the jurisdiction of the National Energy Board.

Power is generated in Canada by publicly and privately operated utilities and by industrial establishments. Of the total electric power generated in 1973, 72.5% was produced by publicly operated utilities, 13.1% by privately operated utilities and 14.4% by industrial establishments. However, ownership varies greatly in different areas of the country. Although Quebec power installations were at one time privately owned, almost all were transferred to public ownership in 1963. In Ontario almost all electric power has been produced by a publicly owned utility for over 60 years.

Because the determination of market prices and regulation of services is limited to inter-fuel competition with oil, gas and coal, there is some regulation of electric utilities in all provinces. In all but two provinces major generation and main transmission of power is the responsibility of a provincial Crown corporation. Investor-owned electric utilities are prominent in Alberta, Newfoundland and Prince Edward Island and continue to play a significant role in Ontario and British Columbia; they contributed about 13.1% of the total power generated in Canada in 1973. Non-utility generating facilities in industrial establishments represented 10.7% of installed capacity at the end of 1973 and generated 14.4% of the total electric energy produced in Canada in that year; however, on a percentage basis, there is a continuing decline in industrial generation as it becomes increasingly attractive to purchase power from utilities which can take advantage of larger unit sizes and operational flexibility. Even when process steam is required for an industrial operation, there are instances when it is advantageous to purchase both steam and power from the electric utility.

13.5.8 Provincial developments in 1974

Newfoundland. The water power resources of Newfoundland and Labrador are very substantial. On the island, although the rivers are generally not long, topography and run-off favour hydro-electric power development and there are several potential hydro sites in Labrador in addition to sites on the Churchill River (Labrador), downstream of the Churchill Falls development.

The Newfoundland and Labrador Power Commission was established in 1954 to supply power wherever needed throughout the province. The Commission began large-scale production of electric energy in 1967 when the Baie d'Espoir plant began operating and the provincial transmission grid was established. Power is supplied from this grid directly to several industries and to investor-owned electrical distribution companies for urban distribution. The Newfoundland Light and Power Company is the principal distributor. Bowater Power Company Limited supplies the Bowater Newfoundland Pulp and Paper Mills Limited and several mining operations. Electricity is provided to isolated areas by the Newfoundland and Labrador Power Commission through a Rural Electricity Authority and through Power Distribution Districts, principally by means of diesel generating facilities.

During 1974 the development of the hydro-electric potential of the lower Churchill River at Gull Island and the transmission of its output over an HVDC system to the island of Newfoundland was considered. On April 25, 1974, the Government of Canada announced a grant of \$350,000 for a feasibility study on electrical interconnection with the Canadian mainland.

In February 1975 the federal government agreed to provide loans to the Newfoundland and Labrador Power Corporation, at Crown corporation rates, of up to \$343 million for the Gull Island hydro-electric development in Labrador. The loans will represent 50% of the estimated cost of HVDC transmission facilities between the Gull Island site and load centres in Newfoundland and will include a tunnel cable crossing under the Strait of Belle Isle. Also included is an alternating current transmission link with the Churchill Falls power project to connect the Newfoundland power system to that of Quebec. Federal grants toward the cost of extensive preliminary studies totalled \$450,000. The proposed installation would have an installed capacity of 1,800 MW and an annual energy output of 11.7 billion kilowatt hours a year. The transmission system to Newfoundland would extend nearly 640 miles to a terminal station near St. John's. Present plans call for an 800-kV HVDC system capable of delivering 1,600 MW to the island of Newfoundland. Development of the Gull Island site, together with

the proposed transmission system, is considered to represent the best long-term option for expansion of the electric energy supply to the island of Newfoundland. Important additional advantages would accrue from linking the transmission system to the Hydro-Québec system. Discussions were taking place between the Newfoundland and Quebec utilities on arrangements to exchange surplus energy to the mutual advantage of both provinces.

The proposed financial assistance falls within the terms of the policy of offering loans of up to 50% of capital cost for regional electrical interconnections which offer opportunity for economic development and improved security of supply. The new generating station will be located on the Churchill River some 140 miles downstream of the now-completed 5,225-MW Churchill Falls generating station and would use the same water supply. The Gull Island development, based on a renewable resource, provides a viable option to increased dependence on oil-fuelled electric energy generation and in energy terms is equivalent to Newfoundland's current total oil consumption of 50,000 b/d. On completion of the Gull transmission link and a cable interconnection to Prince Edward Island to cost \$36 million, all provinces of Canada will have electrical power systems which are interconnected with a neighbouring province.

In the short run, additions in the 1975-76 period include gas turbine generation installations at Stephenville (50 MW), Burin Peninsula (25 MW) and in St. John's (60 MW). In 1977 two additional 77-MW hydro units at Baie d'Espoir will raise the capacity of that station to 613 MW. Energy demands on the island system were up 8.4% over 1973 and estimated load growth for the next three years is expected to exceed 10% a year.

In 1974 the government of Newfoundland purchased BRINCO's financial interest in the Churchill Falls (Labrador) Corporation Ltd., including the hydro-electric development and water power rights in Labrador. The last four of 11 units were placed in service at Churchill Falls in 1974, bringing the total installed capacity to 5,225 MW and making this the largest single generating station in Canada and one of the largest in the world.

Prince Edward Island. The absence of large streams in the province has led to an almost total dependence on oil-fuelled thermal-power generation except for a few minor hydro plants. The Maritime Electric Company, Limited provides direct service to customers except in Summerside, where a municipal electric utility purchases power from the Company for distribution; the town maintains a 6.9-MW diesel plant on stand-by.

The rapid increase in oil prices has escalated power costs for all classes of consumers. A submarine power cable to connect Prince Edward Island to the mainland via New Brunswick by the end of 1976 will provide access to other power sources, including larger and more efficient fossil-fuelled plants and in due time nuclear generation. The federal government has announced a grant and long-term loan of \$27 million for the project, which has been estimated to cost a total of \$36 million.

Nova Scotia. In 1973 the operations of the Nova Scotia Light and Power Company Limited and the Nova Scotia Power Commission were integrated into a single utility, the Nova Scotia Power Corporation, following provincial government purchase of shares held by private investors.

No new generation was added in 1974 but work proceeded on the addition of a 150-MW oil-fired unit at the Tufts Cove thermal station (Halifax area). Two 30-MW gas turbines have been purchased for Cape Breton.

Increases in the costs of oil fuel have given rise to consideration of several alternative generation additions. The last substantial hydro site in the province, at Wreck Cove in Cape Breton, is being re-examined as a 200-MW peaking installation, and nuclear generation is being studied. Additional base load capacity will be needed by the end of the decade and siting and fuelling for at least 300 MW of additional thermal capacity to meet that need is now under study.

Transmission developments in 1974 included 138 kV reinforcement between Port Hastings and Sydney. Preparations are being made to reinforce the New Brunswick interconnection at 345 kV.

New Brunswick. The New Brunswick Electric Power Commission was incorporated under the Electric Power Act of 1920. Power supply to meet present local demands is partly secured by a purchase agreement with Hydro-Québec covering the period 1971-76 which provides for

supply of over 11,000 GWh of surplus energy a year made available as a result of completion of the Churchill Falls development in Labrador.

Although no new additions to generation were made during 1974, the province was actively proceeding on a generation expansion program which will raise the installed capacity in 1980 by 1,760 MW, an increase of 132%. These additions include hydro, oil-fired thermal, and nuclear generation.

The first 320-MW unit of the 960-MW oil-fired thermal station at Coleson Cove will be in service late in 1975 with two additional units in 1976. The Mactaquac hydro station on the Saint John River is being increased to 638 MW capacity with the installation of the fifth and sixth units in 1978 and in the same year a 200-MW dual-fuelled (oil or coal) unit will be added to the Dalhousie thermal station.

Planning for reinforcement of the provincial transmission system is under way. The existing system will eventually have an overlay at 345 kV to connect the nuclear station in southern New Brunswick with load centres. Reinforcement of the Nova Scotia interconnection at 345 kV is also planned for 1977.

Quebec. The richest of all provinces in water power resources, Quebec possesses about 40% of the total for Canada and led in developed water power with installations of 13,799 MW in 1973, representing about 40.3% of the national total. Power production is facilitated by the regulation of stream flow through storage dams owned and operated by the Department of Natural Resources, and some responsibility for regulation rests with the Quebec Hydro-Electric Commission.

The abundance of Quebec's water power wealth, much of it in reasonable proximity to existing demand areas, has limited the application of thermal power to specific local use. With new developments in transmission technology allowing economic long-distance transportation of large blocks of power, it seems likely that Quebec will continue to concentrate on hydro-electric power and to develop more remote rivers. Nevertheless, Hydro-Québec is beginning to look toward thermal generation since it will serve not only to help guarantee an adequate power supply in the face of increasingly heavy demands but also to render the almost exclusively hydro-electric base more flexible through integrated operation. Quebec's largest conventional thermal plant, the Tracy station near Sorel, has an installed capacity of 600 MW.

Work on the Outardes-2 site in the Manicouagan region has been restarted after six years of inactivity following the 1968 decision to purchase energy from Churchill Falls. The project is the final part of the 5,500-MW, \$1.5 billion Manicouagan-Outardes complex. Preliminary construction began in 1974 and the three 151.3-MW units are expected to be in service in 1978-79. Manicouagan-3 is nearing completion; the initial three of six 197.5-MW units are scheduled for service in 1975 and the station will be completed to a total of 1,185 MW by 1976.

Construction by Hydro-Québec of a 600-MW nuclear generating station, Gentilly-2, is proceeding satisfactorily and it is expected to be in service in 1979. The demonstration nuclear unit, Gentilly-1, which is owned by Atomic Energy of Canada but connected to the Hydro-Québec system, was restored to service late in 1974 and is expected to operate at full load in 1975. The plant had been shut down primarily because of the shortage of heavy water; in the interim improvements and modifications to ensure greater stability and better protection for the reactor system were incorporated. Gentilly-1 is a boiling light water version of the CANDU family, while Gentilly-2 is a standard pressurized heavy water design similar to the Pickering units in Ontario.

A 36-MW gas turbine generating station at Les Boules was removed from service in 1974.

Major long-range expansion plans are centred on the James Bay development. A work stoppage in 1974 has forced a delay of about six months in the projected date for first power deliveries from the LG-2 station to the fall of 1980. During the period 1980-85 an estimated 10,000 MW will be installed at four sites on La Grande River. LG-2, about 73 miles from the James Bay coast and the first site to be developed, will be completed to a total of 5,328 MW by the end of 1982; the remaining sites will be LG-1 (840 MW) about 19 miles below LG-2; LG-3 (1,760 MW) approximately 75 miles upstream of LG-2, and LG-4 (2,072 MW) some 140 miles further upstream.

An agreement in principle between the Quebec government and the Inuit and Cree peoples of northern Quebec was signed during 1974, and negotiations were continuing toward a final settlement. The agreement includes provisions granting to the native peoples 5,250 sq

miles of land as well as exclusive hunting, fishing and trapping rights on an additional 60,000 sq miles; the native people will participate in administering and controlling a hunting, fishing and trapping region throughout the area. Provision is also made for local government, native economic development and environmental protection. In addition, the Inuit and Indian people will receive a tax-free grant totalling \$150 million, of which \$75 million must be paid in the initial 10 years, with the balance to come from royalties on the hydro development.

The Abitibi region of the province is electrically isolated from the rest of the Hydro-Québec system but will be linked through the James Bay transmission facilities by 1980. To provide additional generation for rapidly increasing short-term needs, three 60-MW gas turbines will be added at Cadillac in 1976. The region is interconnected with the northern Ontario system and plans are being made to purchase energy from Ontario by 1977.

Projects under consideration include hydro sites on the Saint-Maurice River and a pumped storage site at Lac Saint-Joachim, 30 miles below Quebec. Preliminary studies have been made of other pumped storage sites and of undeveloped hydro sites along the north shore of the St. Lawrence River (Magpie, Sainte-Marguerite, Moisie rivers) and in the Lac Saint-Jean area.

Hydro-Québec estimates that the demand for electric energy will increase by 7.8% a year during the 1974-85 period. Financing for over 15,000 MW of new capacity to meet this demand will require large capital investment and to ensure adequate internal generation of funds, a three-year plan of rate increases has been submitted to the Quebec government. Subject to export licensing an agreement has been developed involving supply of surplus energy to the Power Authority of the State of New York (PASNY) up to 14.4 billion kWh during the period 1977-81 via a proposed 765-kV interconnecting transmission system; the agreement provides the right to recall any energy needed for Quebec's own use. From 1982-97, according to the agreement, PASNY may make annual purchases of 3 billion kWh with provision for purchase of an equal amount during the winter by Hydro-Québec. This exchange recognizes the seasonal differences in demand between the Canadian and US utility systems.

Ontario. Most of the electric power produced in the province is generated by The Hydro-Electric Power Commission of Ontario. The province's largest hydro-electric generating station is located on the Niagara River at Queenston, where the Sir Adam Beck-Niagara generating stations Nos. 1 and 2 and the associated pumped storage-generating station have a combined capacity of 1,815 MW.

Ontario has more thermal capacity than any other province in Canada; capacity installed at the beginning of 1974 was 10,800 MW, about 54% of the national total. Ontario Hydro's Lakeview station at Toronto is Canada's largest thermal generating station with an installed capacity of 2,430 MW. The Lambton station near Sarnia reached its designed capacity of 2,000 MW in 1970. Except for the oil-fired Lennox station (near Kingston), Ontario's fossil-fuelled thermal plants were all built for coal-firing. The R.L. Hearn plant in Toronto was subsequently converted to burn natural gas.

The East and West Systems, formerly separate operating entities, were fully integrated in 1970 and, although the capacity of the interconnection is a limiting factor in the exchange of power, the combined facilities form a unified provincial network. For general day-to-day operations the province is divided into seven regions, with regional offices located in major municipalities.

The primary concern of the Commission is the provision of electric power by generation or purchase to more than 350 electric utilities for resale in municipalities having "at cost" contracts with the Commission. The Commission also supplies power in bulk to direct customers, mostly industrial consumers whose requirements are so large or so unusual as to make service by local municipal utilities impracticable; these include mines, industries in unorganized areas, and certain interconnected systems.

In addition to these operations which represent about 90% of its energy sales the Commission delivers electric power to retail customers in rural areas and in a small group of 15 municipalities served by Commission-owned local distribution facilities. However, retail service is generally provided by municipal electric utilities, owned and operated by local commissions which supply consumers in most cities and towns, many villages and certain

populous township areas. In addition to administering the enterprise over which it has direct control, the Commission, under the Power Commission Act and the Public Utilities Act, exercises certain regulatory functions, particularly with respect to the group of municipal electric utilities it serves.

Expansion of Ontario Hydro's capacity in 1974 was limited to installation of the fourth 500-MW unit at Nanticoke. Peak demand in December was 13,538 MW, a reduction of 0.5% from the previous year — a decline attributable to an unusually mild December coupled with slower economic activity. Total electric energy made available in the province was 5.8% higher in 1974 and 40% of this increase was met by higher net imports from other provinces.

A fire in the No. 2 unit at the Nanticoke thermal generation station resulted in all four 500-MW units being taken out of service. An additional loss of system generating capacity was caused by the shutdown of one 540-MW unit at the Pickering Nuclear Station. As a result, Ontario Hydro's dependable peak capacity was reduced to 15,578 MW, 10% below the 1973 total. Interconnections with neighbouring systems provided reserves to maintain security of supplies to Ontario customers.

Further additions to Ontario Hydro's capacity include installation of Units 5 to 8 at Nanticoke which should be completed on schedule by 1977; four 800-MW nuclear units at the Bruce generating station near Kincardine; two 39-MW hydro-electric units at Arnprior; four 574-MW oil-fired units at the Lennox station; four additional 500-MW nuclear units at the Pickering generating station; and four 500-MW oil-fired units at the Wesleyville station near Port Hope. Great Lakes Power Company plans to add a 25-MW hydro unit to its Andrew Falls station in 1975 and is studying three additional hydro sites.

During 1974 the Ontario government approved the route of a new 500-kV transmission corridor between the Nanticoke and Pickering generating stations together with a 500-kV line from the Bruce generating station to a new transformer station at Milton, where the two lines will connect.

Canada imports coal from the US to produce about 25% of the electricity in Ontario and to serve the needs of the steel industry there. In 1974-75 the cost of this coal has more than doubled and difficulties have arisen in getting full deliveries or in making contracts for future requirements. Canadian stockpiles have been adequate to meet the situation but have been severely depleted partly because of strikes in the transportation and US mining industries. Alternative Canadian sources of both thermal and metallurgical coal to supplement US supplies may be available after some years but in the immediate future Ontario must remain dependent on US supplies. There is increasing and urgent interest in securing future supplies of both metallurgical and thermal coal from western Canada. Meeting these requirements will require an expansion in production and, particularly, in transportation facilities. The present transport system could probably handle up to 1 million tons a year by rail to the Lakehead and by ship to the plants. Construction of a 12 million-ton-capacity coal terminal is now projected for Thunder Bay. Rail facilities from BC and Alberta will need upgrading to move coal by unit trains to Thunder Bay, and either the railways or the Ontario purchasers of coal will have to acquire trainsets of locomotives and hopper cars. Over the longer term, transportation of most of the coal by pipeline in the form of a slurry is a possibility.

Manitoba. Manitoba Hydro is the primary agency responsible for the generation and distribution of electric power in the province. The corporation was formed April 1, 1961, merging the Manitoba Power Commission, the provincial distributing agency created in 1919 to serve rural Manitoba, and the Manitoba Hydro-Electric Board, the power generating and development authority established in 1951.

With immense hydro-electric capabilities on the Winnipeg, Churchill, Nelson and Saskatchewan rivers, Manitoba has more water power resources than the other Prairie provinces. Until recently, hydro-electric generating stations on the Winnipeg River supplied most of the power requirements of southern Manitoba. Manitoba Hydro's high-voltage, long-distance transmission lines, however, will carry ever-increasing amounts of power south from hydro-electric stations on northern rivers to help meet the province's constantly growing power demands.

Manitoba Hydro supplies over 250,000 consumers in 700 communities throughout rural Manitoba and suburban Winnipeg and operates nine hydro-electric stations, two thermal-

electric stations and a number of isolated diesel plants with installed capacity totalling 2,970 MW at the end of 1974. These stations join the City of Winnipeg Hydro Electric System's Pointe du Bois and Slave Falls stations to form the Manitoba Integrated System.

Pine Falls, McArthur, Seven Sisters and Great Falls hydro stations are on the Winnipeg River approximately 70 miles northeast of Winnipeg; Grand Rapids hydro station is on the Saskatchewan River 285 miles northwest of Winnipeg; and Kelsey and Kettle Rapids hydro stations are 400 and 450 miles northeast of Winnipeg on the Nelson River. Responsibility for operation of the Sherritt Gordon Mines, Limited's Laurie River hydro stations 1 and 2 was assumed by Manitoba Hydro in May 1970.

The development of Nelson River hydro-electric potential is continuing. The final three of 12 units at the Kettle generating station were added to bring the total to 1,224 MW. Work is well advanced on the next site, at Long Spruce, with the first unit planned for operation late in 1977 and completion to a total of 980 MW by 1980. At the end of 1974 the powerhouse and spillway were more than 50% completed and installation of the diversion gates was to be finished in 1975. A third site on the Nelson River at Limestone Rapids, downstream from Long Spruce, is in the design and planning stage. Access roads and site clearing began in 1975.

Important regulation and channel improvement work is progressing on structures and channels forming the waterway from Lake Winnipeg into the Nelson River. As part of this project, the Jenpeg generating station, with six 28-MW units, will begin operation in mid-1976. Other work on the diversion route through the Rat-Burntwood river systems between the Churchill and Nelson rivers is under way, notably at the Missi Falls and Notigi Lake sites. The Missi Falls structure will regulate flow from Southern Indian Lake to the Churchill River. Notigi, at the outlet of Notigi Lake to the Rat River, will initially regulate flow but has provision for future generator installation.

The HVDC transmission system connecting the Nelson River generating sites to southern Manitoba is being expanded by the addition of converter capacity at the sending and receiving stations. Equipment has been placed on order to complete the first bipole to its planned rating of 1,620 MW at ± 450 kV with a target completion date of late 1976. Planning is well advanced on a project to add converter equipment to form the second bipole which will raise the capacity of the HVDC system by 1,800 MW to a total of 3,420 MW. This addition is to be phased over 1978-1983 and will provide capability for the output of all three generating sites on the lower Nelson River.

Saskatchewan. The Saskatchewan Power Corporation was established in 1949 by the Power Corporation Act (RSS 1965, c.40, as amended) as a successor to the Saskatchewan Power Commission which had been in operation since 1929. The original functions of the Corporation included the generation, transmission and distribution, sale and supply of electric energy to make abundant electric power available throughout the province at reasonable rates. Since 1952, the Corporation has also been authorized to produce or purchase and to transmit, distribute, sell and supply natural or manufactured gas.

Generation expansion planned for 1975 provided for a 70-MW gas turbine at Landis, 75 miles northwest of Saskatoon. Provision is being made for an underground gas storage cavern to provide for winter peak operation without placing excessive demands on the gas system.

In 1977 an additional 300-MW unit at the Boundary Dam lignite fuelled thermal station will raise the total installed capacity to 882 MW. The next proposed addition is for a new lignite fuelled station to be known as Poplar River near Coronach in south central Saskatchewan with a tentative commissioning date of 1979 for the first 300-MW unit. Further development under consideration includes hydro sites at Wintego on the Churchill River and at Nipawin on the Saskatchewan River.

In 1974 some 57.5% of the electric energy was generated by thermal stations and the balance by hydro-electric stations.

Alberta. Electric power generation in Alberta is provided by two major investor-owned companies and three municipal utilities. In addition, a number of municipal systems handle local distribution of power purchased from the investor-owned utilities. Electrical utility companies previously known as Canadian Utilities Limited and Northland Utilities Limited were merged in 1972 to form Alberta Power Limited.

The Alberta Energy Resources Conservation Board regulates the construction and operation of electric utilities under the Hydro and Electric Energy Act of the province of Alberta, and the Public Utilities Board regulates the rates.

There were no additions to generating capacity in the province in 1974 but work proceeded on several projects. Calgary Power expected to commission one 375-MW unit in 1975 at its Sundance coal-fired thermal station in Lake Wabamun, west of Edmonton, and an additional 375-MW unit will be completed in 1976. Approval has been received to add a third 375-MW unit with an in-service date of 1978 which will raise the total capacity of the Sundance station to 1,725 MW. Environmental effects are being minimized through installation of a 1,200-acre cooling pond at Sundance and the provision of electrostatic precipitators on all Sundance units. Results from precipitators in use on the two 300-MW operating units show a 99.5% removal of exhaust ash. These devices are also being added to the older Wabamun station and were to be in service by mid-1975. Expenditures for all environmental protection devices at the two stations will likely exceed \$80 million.

Edmonton Power is continuing the construction of additions to its Clover Bar gas-fired thermal station which will add a 165-MW unit in 1976 and another in 1978, thus doubling the total station capacity to 660 MW. Environmental studies are continuing on the effect of warm water discharge on the biota of the North Saskatchewan River which is used for cooling and on the reduction of nitrogen oxides in the stack discharge.

Alberta Power expected to place in service a second 150-MW unit during 1975 at its Battle River coal-fired thermal station. The 5-MW diesel generating station at Jasper was completely destroyed by fire early in 1974. Replacement diesel units have been installed on a temporary basis and a new station with a total capacity of 8.4 MW became operational in 1975. Construction of a large-capacity coal-fired station near Dodds (40 miles southeast of Edmonton) is under consideration for commissioning in the early 1980s.

Transmission developments in Alberta include additions to 240 kV and 138 kV lines by Calgary Power and reinforcement of the interconnection at 240 kV between Edmonton Power and Calgary Power at the Lambton, Rosedale and Jasper substations. Alberta Power added 35 miles of 144/240 kV-line during the year.

British Columbia. In terms of installed hydro capacity, British Columbia is exceeded only by Ontario and Quebec. The province has many mountain rivers offering abundant opportunity for the development of hydro-electric power; notable for the magnitude of their power potential are such rivers as the Columbia, Fraser, Peace and Stikine. Hydro developments on smaller rivers in the south once met the major load requirements of the province but in 1968 the immense power resources of the Peace River began to supplement the energy supply. Development of the hydro potential in Canada by storage and regulation resulting from Columbia River Treaty projects is under way at Mica (on the Columbia River) and at Kootenay Canal on the Kootenay River.

The foremost producer and distributor of electric power in British Columbia is the British Columbia Hydro and Power Authority, a provincial Crown corporation. B C Hydro operates a diversified system of public utilities including transportation services and gas distribution. Electric power is generated, transmitted and distributed throughout areas of the province containing more than 90% of the population. Natural gas is purchased and distributed in Greater Vancouver and the Fraser Valley, and liquefied petroleum gas in Greater Victoria.

The ninth unit at the G.M. Shrum Station on the Peace River was completed during 1974 raising the total capacity of this station to nearly 2,100 MW. A 40.5-MW gas turbine unit was installed at the Keough Station near Port Hardy and two similar units were added in 1975. The sixth 150-MW unit at the Burrard station was also expected to be in service in 1975 as was a 28-MW gas turbine unit at Rupert.

Major additions to hydro generation are under construction and during the period 1975-80, 3,465 MW of new hydro capacity will be added to the system. Excavation is nearly complete at the Mica powerhouse and much of the first stage concrete has been placed. The first elements of No. 1 turbine were put in place early in 1975 and it is expected that two units with a nameplate rating of 435 MW each will be in service in 1976 and two more in 1977. The Kootenay Canal Project is well advanced with the No. 1 turbine practically complete and other units in various stages of installation. Two of the four units of 125 MW each were scheduled

for completion in 1975 and the remaining two in 1976. On the Peace River 14 miles downstream of the G.M. Shrum generating station, preliminary work on camps, site-clearing and access roads has been put in hand at Site 1; first power from this four-unit 700-MW station is expected in 1979 with completion in 1980. The fourth major hydro electric installation is at the Seven Mile Project and preliminary work on the labour camp started in 1975. Three units totalling 525 MW are expected to be in service in 1980.

To match the generation expansion program significant additions to the transmission system are in progress. By the end of 1974, 61 miles of the 500-kV circuit No. 1 to Mica had been completed and work was proceeding on the remaining line sections. Clearing was completed for the second 500-kV circuit.

The capacity of the main 500-kV system from the G.M. Shrum Station was increased by additions to the series capacitor installations at four locations. Civil engineering works were completed at the new 500-kV substations at Nicola and Meridian.

For the longer term, detailed studies are being made of coal deposits at Hat Creek, 13 miles west of Cache Creek, as a possible source of fuel for a large thermal electric generating station. This deposit is now estimated at 500 million tons which could support a 2,000-MW generating station, and more coal may well be located in areas surrounding the proven body.

Yukon Territory and Northwest Territories. The Northern Canada Power Commission, a Crown corporation established in 1948, is empowered to survey utility requirements, construct and operate public utility plants in the Northwest Territories, the Yukon Territory and, subject to the approval of the Governor in Council, elsewhere in Canada. Projects undertaken by the Commission must be financially self-sustaining.

A preliminary evaluation of hydro-electric potential has been made for most of the major rivers in the Yukon Territory and in the central portion of the Mackenzie district of the Northwest Territories confirming the existence of substantial waterpower potential. The Yukon River and its tributaries contain some of the larger undeveloped hydro-electric resources in North America.

Except for the Yellowknife area the power needs of the Northwest Territories prior to 1965 were met from thermal sources but the balance was altered in favour of hydro by completion of the station on the Taltson River near Fort Smith. With several new additions over the 1970-73 period, thermal facilities have again become dominant in terms of installed capacity. Thermal (diesel) capacity also surpassed hydro in the Yukon Territory in 1971, however, from an energy production point of view hydro is the dominant energy source in both Territories since the larger load centres are essentially on hydro supply. Thermal electric generation in the Northwest Territories and the Yukon Territory has been provided by diesel units and this same source, employing larger capacity units, will continue to play a major role in meeting load growth in both Territories. Additional hydro capacity is being developed in both areas and this will likely be the predominant power source in the long term.

The Northern Canada Power Commission has hydro-electric power developments on the Yukon River near Whitehorse and on the Mayo River near Mayo in the Yukon Territory; in the Northwest Territories, it has developments on the Snare River northwest of Yellowknife and on the Taltson River northeast of Fort Smith.

During 1974 Northern Canada Power Commission increased its generating capacity by a total of 13.6 MW adding 1.6 MW in the Yukon and 12.0 MW in the Northwest Territories.

During the year the Commission acquired three additional systems in Grise Fiord, Pond Inlet and Arctic Bay, NWT; negotiations progressed with the Ministry of Transport toward acquisition of the existing power system in Resolute, NWT; and a generation and distribution system was established in Johnson's Crossing, YT. At the end of 1974 the Commission was responsible for electrical services in 52 separate communities throughout the northern territories.

Construction is nearing completion on a 30-MW hydro plant on the Aishihik River in the Yukon Territory, which will be tied into the present Whitehorse-Faro system. Studies are also proceeding on the development of an even larger hydro site with a potential of the order of 50 to 100 MW.

In the Northwest Territories construction began on a 9.6-MW two-unit hydro station at Snare Forks, which will be the third development on the Snare River. The Snare Forks plant is

scheduled for completion in the fall of 1976 and will supplant diesel generation now augmenting hydro supply to accommodate rapidly rising demand in the Yellowknife area.

13.5.9 Electric power statistics

Electric power statistics presented in this Section are based on reports of all electric utilities and all industrial establishments that generate energy, regardless of whether or not any is sold, and therefore show the total production and distribution of electric energy in Canada. Utilities are defined as companies, commissions, municipalities or individuals whose primary function is to sell most of the electric energy that they have either generated or purchased. Industrial establishments are defined as companies or individuals generating electricity mainly for use in their own plants.

The current series of electric power statistics dates back to 1956. Earlier reports, entitled *Central electric stations*, were concerned solely with the electric utility industry and hence excluded statistics relating to power produced by industrial establishments for their own use, although power sold by such establishments was included. Figures appear in Tables 13.15 - 13.20.

Power generated in 1974 totalled 278,969 GWh — an increase of 6.4% from 1973 compared with one of 9.1% from 1972 to 1973. Approximately 75% of the total generation is by hydro, but the proportions of hydro and thermal differ markedly from province to province as indicated by 1974 ratios ranging from 99.7% hydro and 0.3% thermal in Quebec to 100% thermal in Prince Edward Island. Other predominantly hydro provinces are Newfoundland 98.6%, Manitoba 98.1% and British Columbia 94.9%. Hydro (50.2%) and thermal (49.8%) generation were virtually in balance in Ontario where nuclear generation contributed 33.7% of the thermal component and 16.8% of the province's total electrical energy production. In the remaining provinces hydro was overtaken by thermal, e.g. Saskatchewan 42.5/57.5%, Nova Scotia 13.8/86.2% and Alberta 12.1/87.9%. Hydro generation was predominant in the northern territories at 66% in the Yukon Territory and 77% in the Northwest Territories. Detailed figures are shown in Table 13.15.

Table 13.16 gives summary figures of power production and distribution classified by province or territory and Tables 13.17 and 13.18 give figures classified by type of production establishment. Installed capacity in Canada at the end of 1974 totalled 57,151 MW compared to 54,376.4 MW in 1973, and 49,929 MW in 1972. Of the 1973 total, 48,540.8 MW were accounted for by utilities and the remainder by industrial establishments. Exports to the United States in 1973 amounted to approximately 16,286 GWh, an increase of over 47% (5,249.0 GWh) over 1972, but declined to 15,298 GWh in 1974; net exports totalled 14,724 GWh in 1973 and declined by 12% to 12,956 GWh in 1974.

Average domestic and farm consumption rose from 7,814 kWh in 1972 to 8,170 kWh in 1973. For domestic and farm customers across Canada the average annual bill was \$137.21 in 1973 as against \$126.23 in 1972. Table 13.19 provides more detailed information including the total number of customers served.

In 1973 natural gas accounted for 19.4% of thermal generation by utilities, coal for 48.9%, petroleum fuels for 9.5% and nuclear fuel for 22.2%; corresponding proportions in 1972 were 15.7%, 62.0%, 10.0% and 12.3%, respectively. Details of the type of fuel used, by province, appear in Table 13.20.

Sources

13.1 - 13.5 Energy Development Sector, Department of Energy, Mines and Resources.

Tables

..	not available	bbl	barrels
...	not appropriate or not applicable	b/d	barrels a day
—	nil or zero	Mcf	thousand cubic feet
--	too small to be expressed	MMcf	million cubic feet
e	estimate	MMMcf	billion cubic feet
p	preliminary	MMMMcf	trillion cubic feet
r	revised	kW	kilowatt (1,000 watts)
certain tables may not add due to rounding		MW	megawatt (1,000,000 watts)
		GW	gigawatt (1,000,000,000 watts)
		million =	10 ⁶ , billion = 10 ⁹ , trillion = 10 ¹²

13.1 Trade in energy, 1963 and 1973 (million dollars)

Item	1963	1973
Petroleum		
Exports	249.8	1,782.1
Imports	449.5	1,135.4
Balance	-199.7	646.7
Natural gas		
Exports	81.3	358.1
Imports	2.5	8.1
Balance	78.8	350.0
Petroleum and natural gas		
Exports	331.1	2,140.2
Imports	452.0	1,143.5
Balance	-120.9	996.7
Coal and coke		
Exports	11.6	177.0
Imports	90.4	193.8 ¹
Balance	-78.8	-16.8
Electric energy		
Exports	15.9	122.9
Imports	11.4	7.0
Balance	4.5	115.9
Total		
Exports	358.6	2,440.1
Imports	553.8	1,344.3
Balance	-195.2	1,095.8

¹Includes rail freight charge from the mine to the US border.

13.2 Petroleum, supply and demand, 1963, 1973 and 1974 (thousand barrels a day)

Item	1963	1973	1974 ^c
Supply			
Production	785.5	2,116.2	1,988.0
Crude oil	766.1	1,963.1	1,837.0
Gas plant, liquefied petroleum gas	19.4	153.1	151.0
Imports	497.5	1,023.1	891.5
Crude oil	404.8	897.4	820.0
Products	92.7	125.7	71.5
Total, supply	1,283.0	3,139.3	2,879.5
Demand			
Domestic demand	998.1	1,712.1	1,745.9
Motor gasoline	315.7	556.4	572.2
Diesel fuel	84.8	170.8	186.4
Light fuel oil	187.0	291.7	295.1
Heavy fuel oil	162.8	289.9	305.3
Other (including refinery use and loss)	247.8	403.3	386.9
Exports	265.1	1,393.0	1,083.2
Crude oil	248.2	1,138.6	907.0
Products	16.9	254.4	176.2
Total, demand	1,263.2	3,105.1	2,829.1
Inventory increase	19.8	34.2	50.4

13.3 Natural gas, supply and demand, 1963, 1973 and 1974 (billion cubic feet)

Item	1963	1973	1974 ^c
Supply			
Net production	987.8	3,124.5	3,139.6
Marketable pipeline gas ^a	843.3	2,439.9	2,439.0
Imports	6.8	14.7	9.2
Total, supply	850.1	2,454.6	2,448.0
Demand			
Domestic demand	491.5	1,368.3	1,469.2
Residential	145.9	271.7	298.0
Commercial	70.4	245.9	267.9
Industrial	235.5	711.8	775.6
Other (including pipeline losses, etc.)	39.7	138.9	127.7
Exports	359.6	1,031.0	960.0
Total, demand	851.1	2,399.3	2,429.2
Storage and line pack increase	-1.0	55.3	19.0

^aAfter deduction of field and plant use/loss, processing shrinkage.

13.4 Coal, supply and demand, 1963, 1973 and 1974 (thousand tons)

Item	1963	1973	1974
Supply			
Net production	10,452	22,567	23,261
Imports	14,741	16,639	13,636
Total, supply	25,193	39,206	36,897
Demand			
Consumption	23,456	27,551	27,355
Electrical utilities	5,150	16,571	17,006
Metallurgical use	5,723	8,509	8,268
General industry	12,583	2,471	2,081
Exports	1,054	11,341	11,600
Total, demand	24,510	38,892	38,955
Inventory change	+683	+314	-2,058

13.5 Electric energy, supply and demand, 1963 and 1973 (gigawatt hours)

Item	1963	1973
Supply		
Gross generation	124,213	268,228
Station service	1,975	5,956
Net generation		
Utilities	93,501	227,190
Hydro	78,113	163,241
Thermal	15,388	49,693
Nuclear	—	14,256
Industries	28,737	35,082
Hydro	25,719	29,669
Thermal	3,018	5,413
Utilities and industries	122,238	262,272
Hydro	103,832	192,910
Thermal	18,406	55,106
Nuclear	—	14,256
Imports	2,884	2,162
Total, supply	125,122	264,434
Demand		
Residential and farm	25,321	49,356
Commercial and other	18,594	37,186
Industrial	66,578	130,449
Losses, unallocated	11,016	30,564
Total, domestic demand	121,509	247,555
Exports	3,613	16,879
Total, demand	125,122	264,434

13.6 Wells drilled, by type and region, 1973 and 1974

Region	Oil		Gas		Dry		Total	
	1973	1974	1973	1974	1973	1974	1973	1974
Western Canada	1,001	778	1,656	1,927	1,810	1,342	4,467	4,047
Alberta	600	681	1,518	1,747	1,420	1,106	3,538	3,534
Saskatchewan	392	85	73	122	190	77	655	284
British Columbia	8	6	54	52	99	90	161	148
Manitoba	—	3	—	—	16	18	16	21
Yukon Territory and Northwest Territories	1	3	11	6	85	51	97	60
Eastern Canada	11	4	35	62	103	115	149	181
Ontario	11	4	34	60	74	90	119	154
Quebec	—	—	—	—	3	6	3	6
Atlantic provinces	—	—	—	—	1	—	1	—
East coast off-shore	—	—	1	2	25	19	26	21
Total	1,012	782	1,691	1,989	1,913	1,457	4,616	4,228

13.7 Crude oil and equivalent production, by province, 1971-74 (thousand barrels a day)

Item and province	1971	1972	1973	1974	Percentage change 1973-74
Crude oil	1,304	1,481	1,743	1,629	-6.5
Alberta	973	1,160	1,431	1,363	-4.8
Saskatchewan	242	237	235	198	-15.7
British Columbia	69	65	58	52	-10.3
Manitoba	15	14	14	11	-21.4
Other	5	5	5	5	—
Pentanes plus/condensate	128	166	169	162	-4.1
Alberta	124	162	165	158	-4.2
Saskatchewan	1	1	1	1	—
British Columbia	3	3	3	3	—
Synthetic crude oil	—	—	—	—	—
Canada — Alberta	43	51	51	46	-9.8
Total	1,475	1,698	1,963	1,837	-6.4
Alberta	1,140	1,373	1,647	1,567	-4.9
Saskatchewan	243	238	236	199	-15.7
British Columbia	72	68	61	55	-9.8
Manitoba	15	14	14	11	-21.4
Other	5	5	5	5	—

13.8 Oil refining, by province, 1974

Province or territory	Existing refineries ¹			New refineries planned or under construction	
	No.	Capacity '000 b/d	% of total	Capacity '000 b/d	Scheduled for completion
Newfoundland	2	114	5.6	200	1,980
Nova Scotia	3	181	8.9	—	...
New Brunswick	1	120	5.9	—	...
Quebec	7	647	32.0	—	...
Ontario	7	523	25.8	265	1,979
Manitoba	2	48	2.4	—	...
Saskatchewan	3	67	3.3	—	...
Alberta	7	178	8.8	140	1,975
British Columbia	7	143	7.1	—	...
Northwest Territories	1	3	0.2	—	...
Total	40	2,024	100.0	605	...

¹Expansion of some existing refineries is in progress.

13.9 Coal production¹, by type and province, 1973 and 1974

Type and province	1973		1974	
	tons	\$'000	tons	\$'000
Bituminous	13,599,348	160,112	13,803,000	246,700
Nova Scotia	1,175,587	15,568	1,410,000	31,200
New Brunswick	394,219	3,390	415,000	5,000
Alberta	4,256,676	48,784	3,607,000	66,500
British Columbia	7,772,866	92,370	8,371,000	144,000
Subbituminous	—	—	—	—
Alberta	4,939,721	11,119	5,595,000	14,000
Lignite	—	—	—	—
Saskatchewan	4,028,280	8,500	3,842,000	7,300
Total	22,567,349	179,731	23,240,000	268,000

¹Includes production of clean coal and shipments of raw coal from the mine.

13.10 Installed generating capacity, as at Dec. 31, 1973 and 1974 (megawatts)

Year and province or territory	Steam		Internal combustion	Gas turbine	Total thermal	Hydro	Total
	Conventional	Nuclear					
1973 ^r							
Newfoundland (incl. Labrador)	354	—	61	28	443	4,300	4,743
Prince Edward Island	71	—	7	41	119	—	119
Nova Scotia	1,012	—	6	25	1,043	160	1,203
New Brunswick	621	—	8	23	652	680	1,332
Quebec	676	266	62	36	1,040	13,799	14,839
Ontario	7,892	2,400	35	473	10,800	7,008	17,808
Manitoba	447	—	20	28	495	2,169	2,664
Saskatchewan	1,086	—	33	89	1,208	567	1,775
Alberta	2,446	—	42	198	2,686	718	3,404
British Columbia	1,149	—	138	224	1,511	4,803	6,314
Yukon Territory	—	—	36	—	36	26	62
Northwest Territories	1	—	75	1	77	36	113
Canada, 1973	15,755	2,666	523	1,166	20,110	34,266	54,376
Net additions, 1973	1,955	540	15	171	2,681	1,766	4,447
Percentage increase, 1972-73	14.2	25.4	3.0	17.2	15.4	5.4	8.9
1974 ^p							
Newfoundland (incl. Labrador)	354	—	61	28	443	5,966	6,409
Prince Edward Island	71	—	7	41	119	—	119
Nova Scotia	1,012	—	6	25	1,043	160	1,203
New Brunswick	621	—	8	23	652	680	1,332
Quebec	676	266	62	—	1,004	13,799	14,803
Ontario	8,392	2,400	35	473	11,300	7,008	18,308
Manitoba	447	—	20	28	495	2,475	2,970
Saskatchewan	1,086	—	33	89	1,208	567	1,775
Alberta	2,446	—	42	198	2,686	718	3,404
British Columbia	1,149	—	146	264	1,559	5,078	6,637
Yukon Territory	—	—	38	—	38	26	64
Northwest Territories	1	—	87	2	90	35	125
Canada, 1974	16,255	2,666	545	1,171	20,637	36,512	57,149
Net additions, 1974	500	—	22	5	527	2,246	2,773
Percentage increase, 1973-74	3.2	—	4.2	0.4	2.6	6.6	5.1

13.11 Capability and firm power peak-load requirements, actual 1963 and 1970-73, and forecast 1974-78 (megawatts)

Item	Actual					Forecast				
	1963	1970	1971	1972	1973	1974	1975	1976	1977	1978
NET GENERATING CAPABILITY										
Hydro-electric	19,241	27,392	29,593	31,455	34,807	37,200	37,586	39,613	40,946	42,027
Steam, conventional	5,194	12,494	12,568	12,725	15,161	15,841	17,371	21,054	22,724	23,340
nuclear	—	194	1,320	1,753	2,284	2,539	3,268	3,997	4,726	—
Internal combustion	236	328	350	376	375	417	417	422	439	436
Gas turbine	382	914	985	1,098	1,180	1,298	1,540	1,835	2,015	2,040
Total, net generating capability	25,053	41,322	44,816	47,407	53,807	57,295	59,453	66,192	70,121	72,569
Receipts of firm power from United States	2	93	3	5	1	1	1	1	1	1
Deliveries of firm power to United States	122	170	453	427	416	391	164	509	510	510
Total, net capability	24,933	41,245	44,366	46,985	53,392	56,905	59,290	65,684	69,612	72,060
PEAK LOADS										
Firm power peak loads within Canada	20,755	34,447	35,720	38,823	42,699	46,540	49,391	52,932	56,758	60,625
Indicated shortages	28	145	—	98	—	—	—	—	—	—
Total, indicated peak loads within Canada	20,783	34,592	35,720	38,921	42,699	46,540	49,391	52,932	56,758	60,625
Indicated reserve	4,150	6,653	8,646	8,064	10,693	10,365	9,899	12,752	12,854	11,435

13.12 Electric energy consumption in Canada, selected years 1950-73

Year	Total consumption GWh	Percentage consumption			
		Commercial ¹	Domestic and farm	Industrial	Losses and unaccounted
1950	53,459	11	13	67	9
1955	77,946	12	16	63	9
1960	109,302	12	19	60	9
1965	144,165	16	21	55	8
1970	202,337	14	21	57	8
1972	231,557	15	22	54	9
1973	249,298	16	21	54	9

¹Includes street lighting.

13.13 Electric energy consumption, by region, 1960, 1965, 1972 and 1973

Region and year		Total consumption GWh	% of total consumption	Percentage consumption			
				Commercial ¹	Domestic and farm	Industrial	Losses and unaccounted
Atlantic provinces	1960	4,924	5	13	20	58	9
	1965	8,228	6	15	18	60	7
	1972	15,351	7	17	21	55	7
	1973	17,031	7	17	21	54	8
Quebec	1960	44,002	40	7	11	74	8
	1965	52,229	36	12	16	66	6
	1972	76,289	33	15	19	58	8
	1973	82,205	33	15	20	57	8
Ontario	1960	37,157	34	15	25	48	12
	1965	49,276	34	20	26	45	9
	1972	79,089	34	16	25	50	9
	1973	84,283	34	17	24	51	8
Prairie provinces	1960	9,617	9	22	31	34	13
	1965	14,994	10	26	30	34	10
	1972	28,687	12	15	26	47	12
	1973	31,534	12	17	24	47	12
British Columbia ^a	1960	13,602	12	9	16	68	7
	1965	19,438	14	12	15	66	7
	1972	32,141	14	13	17	62	8
	1973	34,245	14	14	18	60	8
Canada	1960	109,302	100	12	19	60	9
	1965	144,165	100	16	21	55	8
	1972	231,557	100	15	22	54	9
	1973	249,298	100	16	21	54	9

¹Includes street lighting.^aIncludes the Yukon Territory and Northwest Territories.

13.14 Electric energy consumption per capita, by region, 1960, 1965, 1972 and 1973

Region and year		Total consumption GWh	Population '000	Consumption per capita kWh
Atlantic provinces	1960	4,924	1,867	2,600
	1965	8,228	1,968	4,200
	1972	15,351	2,082	7,400
	1973	17,031	2,113	8,100
Quebec	1960	44,002	5,142	8,600
	1965	52,229	5,685	9,200
	1972	76,289	6,050	12,600
	1973	82,205	6,081	13,500
Ontario	1960	37,157	6,111	6,100
	1965	49,276	6,788	7,300
	1972	79,089	7,824	10,100
	1973	84,283	7,939	10,600
Prairie provinces	1960	9,617	3,112	3,100
	1965	14,994	3,365	4,500
	1972	28,687	3,562	8,100
	1973	31,534	3,589	8,800
British Columbia ¹	1960	13,602	1,638	8,300
	1965	19,438	1,838	10,600
	1972	32,141	2,302	14,000
	1973	34,245	2,373	14,400
Canada	1960	109,302	17,870	6,100
	1965	144,165	19,644	7,300
	1972	231,557	21,820	10,600
	1973	249,298	22,095	11,300

¹Includes the Yukon Territory and Northwest Territories.

13.15 Electric energy generated, by type of station, 1964 and 1970-74, and by province 1973 and 1974 (megawatt hours)

Year and province or territory	Generated by		Total	Year and province or territory	Generated by		Total
	Water power	Thermal power			Water power	Thermal power	
1964	113,343,948	21,642,799	134,986,747	1972	179,998,571	60,214,177	240,212,748
1970	156,708,854	48,014,043	204,722,897	1973	192,842,569	70,492,332	263,334,901
1971	160,984,485	55,487,718	216,472,203	1974	210,187,000	68,782,000	278,969,000
1973P				1974P			
Newfoundland	19,357,348	385,675	19,743,023	Newfoundland	28,327,000	413,000	28,740,000
Prince Edward Island	—	343,479	343,479	Prince Edward Island	—	383,000	383,000
Nova Scotia	834,082	4,013,198	4,847,280	Nova Scotia	743,000	4,659,000	5,402,000
New Brunswick	3,102,286	3,168,642	6,270,928	New Brunswick	2,589,000	2,966,000	5,555,000
Quebec	79,996,819	415,467	80,412,286	Quebec	83,779,000	275,000	84,054,000
Ontario	40,809,952	39,212,215	80,022,167	Ontario	41,392,000	41,055,000	82,447,000
Manitoba	11,448,974	798,425	12,247,399	Manitoba	14,252,000	275,000	14,527,000
Saskatchewan	2,474,080	4,963,754	7,437,834	Saskatchewan	3,127,000	4,235,000	7,362,000
Alberta	1,520,384	12,109,943	13,630,327	Alberta	1,730,000	12,534,000	14,264,000
British Columbia	32,842,766	4,884,300	37,727,066	British Columbia	33,795,000	1,812,000	35,607,000
Yukon Territory	207,533	75,893	283,426	Yukon Territory	194,000	98,000	292,000
Northwest Territories	248,345	121,341	369,686	Northwest Territories	259,000	76,000	335,000
Canada, 1973	192,842,569	70,492,332	263,334,901	Canada, 1974	210,187,000	68,781,000	278,969,000

13.16 Summary electric power statistics, by province, 1972 and 1973

Year and province or territory	Installed generating capacity kW	Energy made available in Canada MWh	Exported to United States MWh	Ultimate customers ¹	Total revenue from ultimate customers ² \$'000	Electrical utilities	
						Employees	Salaries and wages \$'000
1972							
Newfoundland	3,304,336	4,889,793	—	130,031	40,941	1,518	11,755
Prince Edward Island	92,241	308,116	—	33,878	8,143	196	1,643
Nova Scotia	1,055,111	4,673,091	—	259,834	65,956	2,340	19,682
New Brunswick	1,330,349	5,479,713	1,884,775	204,039	62,772	1,386	13,499
Quebec	14,798,593	76,289,184	82,785	2,043,362	553,100	14,437	149,961
Ontario	16,155,516	79,088,877	6,075,461	2,552,792	765,995	21,310	221,930
Manitoba	2,337,045	10,202,656	845,898	332,797	92,123	2,689	25,729
Saskatchewan	1,624,910	6,129,483	—	326,521	85,409	1,579	17,399
Alberta	2,788,179	12,355,322	—	531,926	144,876	2,347	22,598
British Columbia	6,280,606	31,554,502	2,148,132	846,129	232,061	3,347	36,920
Yukon Territory	60,420	243,330	—	5,566	4,859	103	1,043
Northwest Territories	101,527	342,874	—	9,510	8,719	243	3,104
Canada, 1972	49,928,833	231,556,941	11,037,051	7,276,385	2,064,954	51,495	525,263
1973							
Newfoundland	4,743,907	5,854,623	—	133,737	45,743	1,592	15,135
Prince Edward Island	118,241	343,479	—	35,886	8,828	206	1,867
Nova Scotia	1,203,438	5,024,787	—	277,441	72,679	2,294	22,110
New Brunswick	1,331,724	5,808,436	2,846,983	211,492	69,875	1,492	16,435
Quebec	14,839,309	82,205,214	66,214	2,097,256	610,136	14,702	166,307
Ontario	17,807,196	84,282,707	7,645,684	2,610,148	882,602	21,250	276,352
Manitoba	2,664,320	11,035,131	998,235	341,156	96,908	3,059	30,073
Saskatchewan	1,774,910	6,871,771	—	330,314	92,632	1,634	19,338
Alberta	3,404,024	13,627,302	—	558,024	172,567	2,566	27,277
British Columbia	6,314,170	33,591,475	4,728,999	886,369	257,232	3,493	42,182
Yukon Territory	62,590	283,426	—	6,014	6,499	99	1,046
Northwest Territories	112,589	369,686	—	9,052	9,948	242	3,274
Canada, 1973	54,376,418	249,298,037	16,286,115	7,496,889	2,325,649	52,629	621,396

¹Excludes industrial establishments that purchase power and have generating facilities.

²Excludes revenue from sales to industrial establishments that purchase power and have generating facilities.

13.17 Summary electric power statistics, by type of establishment, 1972 and 1973

Year and item		Electrical utilities			Industrial establishments	Total
		Publicly operated	Privately operated	Total		
1972						
Installed generating capacity	<i>kW</i>	38,103,992	6,443,598	44,547,590	5,381,243	49,928,833
Energy generated	<i>MWh</i>	176,806,167	29,496,996	206,303,163	33,909,585	240,212,748
Hydro		131,301,267	20,226,473	151,527,740	28,416,581	179,944,321
Thermal		45,504,900	9,270,523	54,775,423	5,493,004	60,268,427
Energy made available in Canada		..	..	..	..	231,556,941
Disposal of energy in Canada ¹		166,462,636	16,097,572	182,560,208	48,996,733	231,556,941
Energy exported to United States		9,250,402	824,582	10,074,984	962,067	11,037,051
Ultimate customers in Canada	<i>No.</i>	6,669,758	601,511	7,271,269	5,116	7,276,385
Domestic and farm		5,904,448	515,776	6,420,224	4,793	6,425,017
Commercial		696,816	73,286	770,102	304	770,406
Power		68,494	12,449	80,943	19	80,962
Street lighting		..	..	..	..	..
Revenue from ultimate customers ²	<i>\$'000</i>	1,870,590	192,353	2,062,943	2,011	2,064,954
Revenue from exports to United States		56,055	4,745	60,800	5,244	66,044
Employees	<i>No.</i>	47,188	4,307	51,495	..	..
Salaries and wages	<i>\$'000</i>	486,550	38,713	525,263	..	..
1973						
Installed generating capacity	<i>kW</i>	40,959,290	7,581,540	48,540,830	5,835,588	54,376,418
Energy generated	<i>MWh</i>	190,777,484	34,576,724	225,354,208	37,980,693	263,334,901
Hydro		135,058,708	26,017,649	161,076,357	31,766,212	192,842,569
Thermal		55,718,776	8,559,075	64,277,851	6,214,481	70,492,332
Energy made available in Canada		..	..	..	..	249,298,037
Disposal of energy in Canada ¹		182,337,129	15,867,890	198,205,019	51,093,018	249,298,037
Energy exported to United States		13,560,067	813,272	14,373,339	1,912,776	16,286,115
Ultimate customers in Canada	<i>No.</i>	7,003,240	489,818	7,493,058	3,831	7,496,889
Domestic and farm		6,190,869	417,680	6,608,549	3,593	6,612,142
Commercial		739,703	61,399	801,102	218	801,320
Power		72,668	10,739	83,407	20	83,427
Street lighting		..	..	..	..	..
Revenue from ultimate customers ²	<i>\$'000</i>	2,143,231	178,074	2,321,305	4,344	2,325,649
Revenue from exports to United States		101,426	4,879	106,305	8,560	114,865
Employees	<i>No.</i>	49,106	3,523	52,629	..	..
Salaries and wages	<i>\$'000</i>	586,210	35,186	621,396	..	..

¹Excludes sales by electrical utilities to industrial establishments with generating facilities, sales by industrial establishments with generating facilities to electrical utilities, and inter-industrial sales.

²Excludes revenue from sales by electrical utilities to industrial establishments with generating facilities, and inter-industrial sales.

13.18 Electric power generated classified by type of establishment, by province, 1972 and 1973 (megawatt hours)

Year and province or territory	Electrical utilities		Industrial establishments	Total
	Publicly operated	Privately operated		
1972				
Newfoundland	1,888,749	8,991,583	409,997	11,290,329
Prince Edward Island	836	307,280	—	308,116
Nova Scotia	2,384,911	1,701,978	443,237	4,530,126
New Brunswick	5,445,727	150,717	673,168	6,269,612
Quebec	56,405,328	6,494,745	16,041,399	78,941,472
Ontario	69,989,856	1,833,390	3,206,316	75,029,562
Manitoba	10,899,872	—	9,969	10,909,842
Saskatchewan	5,831,137	711,115	204,389	6,746,641
Alberta	2,840,544	8,938,468	718,861	12,497,873
British Columbia	20,638,977	330,249	12,133,745	33,102,971
Yukon Territory	196,113	21,293	25,924	243,330
Northwest Territories	284,116	16,178	42,580	342,874
Canada, 1972	176,806,167	29,496,996	33,909,585	240,212,748
1973				
Newfoundland	2,382,677	16,921,073	439,273	19,743,023
Prince Edward Island	71	343,408	—	343,479
Nova Scotia	4,358,050	—	489,230	4,847,280
New Brunswick	5,453,071	146,930	670,927	6,270,928
Quebec	57,653,507	4,279,961	18,478,818	80,412,286
Ontario	74,133,030	2,166,694	3,722,443	80,022,167
Manitoba	12,157,787	—	89,612	12,247,399
Saskatchewan	6,552,319	693,168	192,347	7,437,834
Alberta	3,300,192	9,633,662	696,473	13,630,327
British Columbia	24,244,900	349,682	13,132,484	37,727,066
Yukon Territory	235,169	22,139	26,118	283,426
Northwest Territories	306,711	20,007	42,968	369,686
Canada, 1973	190,777,484	34,576,724	37,980,693	263,334,901

13.19 Domestic and farm service by electrical utilities and industrial establishments, 1970-73

Item		1970	1971	1972	1973
Customers	No.	6,076,789	6,215,140	6,425,017	6,612,142
Megawatt hours sold	"	43,430,777	46,541,538	50,205,464	54,019,542
Revenue received	\$'000	685,266	748,779	811,014	907,280
Kilowatt hours per customer	No.	7,147	7,488	7,814	8,170
Average annual bill	\$	112.77	120.48	126.23	137.21
Revenue per kWh	c	1.58	1.61	1.62	1.68

13.20 Fuel used by electrical utilities to generate power, by province, 1972 and 1973

Year and province or territory	Coal		Petroleum fuels		Gas	
	Quantity tons	Value \$	Quantity gal	Value \$	Quantity Mcf	Value \$
1972						
Newfoundland	—	—	24,157,211	2,848,236	—	—
Prince Edward Island	—	—	25,250,755	2,275,513	—	—
Nova Scotia	730,860	7,859,603	166,760,516	9,895,248	—	—
New Brunswick	309,651	2,639,223	133,976,774	10,105,018	—	—
Quebec	—	—	18,825,414	2,042,931	—	—
Ontario	8,375,955	95,294,079	14,652,892	2,300,657	37,600,098	20,004,098
Manitoba	452,093	2,191,506	4,846,400	890,500	497,158	156,709
Saskatchewan	2,364,435	4,392,657	2,714,388	216,268	13,776,155	3,627,902
Alberta	4,533,784	6,173,133	2,729,018	302,595	44,777,900	8,584,317
British Columbia	—	—	11,072,072	2,056,704	6,477,699	1,370,330
Yukon Territory	—	—	1,775,735	524,519	—	—
Northwest Territories	—	—	5,930,558	1,628,784	—	—
Canada, 1972	16,766,778	118,550,201	412,691,733	35,086,973	103,129,010	33,743,356
1973						
Newfoundland	—	—	27,714,680	3,789,009	—	—
Prince Edward Island	—	—	28,037,799	2,590,800	—	—
Nova Scotia	644,902	6,646,381	169,893,042	12,088,318	—	—
New Brunswick	212,551	1,982,010	129,267,844	11,039,829	—	—
Quebec	—	—	11,080,929	2,201,524	—	—
Ontario	7,292,049	87,396,335	15,519,825	3,243,407	41,038,677	22,424,333
Manitoba	425,333	2,332,635	3,567,986	725,965	3,034,605	950,016
Saskatchewan	3,092,920	6,018,651	3,858,961	342,748	18,884,801	4,805,898
Alberta	4,932,325	7,038,111	2,545,858	328,305	54,888,165	11,215,393
British Columbia	—	—	23,883,114	3,803,581	27,707,405	7,225,825
Yukon Territory	—	—	3,288,053	996,930	—	—
Northwest Territories	—	—	7,342,602	2,080,196	—	—
Canada, 1973	16,600,080	111,414,123	426,000,693	43,230,612	145,553,653	46,621,465

Sources

13.1 - 13.20 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada; and Energy Development Sector, Department of Energy, Mines and Resources.

Chapter 14

Housing and construction

14.1 Housing

Although the federal government entered the housing field in 1918 when it made money available to the provinces for re-lending to municipalities, the first general piece of federal housing legislation was the Dominion Housing Act passed in 1935. This was followed by the National Housing Acts of 1938 and 1944. The present National Housing Act, defined as “an Act to promote the construction of new houses, the repair and modernization of existing houses and the improvement of housing and living conditions”, was passed in 1954.

In general the federal government, through successive Housing Acts, has attempted to stimulate and supplement the market for housing rather than assume direct responsibilities that belong to other levels of government or that could be borne more effectively by private enterprise. The aim has been to increase the flow of mortgage money and to encourage lenders to make loans on more favourable terms to prospective home-owners. Almost half of the country's present stock of approximately 6.4 million dwelling units have been built since the first covering legislation was enacted. About one third of these were financed in one way or another under the Housing Acts.

The Farm Credit Act, providing for federal long-term loan assistance for housing and other farm purposes, and the Farm Improvement Loans Act, providing for guarantees for intermediate- and short-term loans made by approved lending agencies to farmers for housing and other purposes, are described in greater detail in Chapter 11. The Veterans' Land Act provides a form of loan and grant assistance to veterans for housing and other purposes; it is dealt with in Chapter 6. These three statutes are concerned only incidentally with housing.

All provinces have complementary legislation providing for joint federal-provincial housing and land assembly projects, and most have enacted separate legislation on housing. Details are available from the respective provincial government departments.

Central Mortgage and Housing Corporation. The Central Mortgage and Housing Corporation is a federal Crown corporation created by Act of Parliament in 1945 (RSC 1970, c.C-16). Under this Act CMHC may make loans and contributions to individuals and organizations for housing. Such funds may be used for construction of new housing or rehabilitation of existing units, urban renewal, planning and servicing new communities, land assembly, construction of student housing, the construction and expansion of sewerage projects, as “start-up funds” to enable individuals or private non-profit organizations to undertake housing projects for low-income groups, for housing on Indian reserves and various other purposes.

The Corporation may also construct and administer housing and certain other buildings on its own account and for other government departments and agencies. Its responsibilities include providing architectural and engineering designs, calling public tenders, administering construction contracts, including any necessary on-site surveying and engineering and carrying out full architectural and engineering inspections.

CMHC is concerned with building technology in formulating standards for housing construction, the use of suitable materials and the development of new building techniques. The Corporation has no laboratory facilities but has experience of performance in the field and seeks the advice of specialists in various agencies and departments of the federal government. Research is conducted into such factors as the demand for new housing, the volume of new housing being built and the supply of mortgage money available. The Corporation also co-ordinates and publishes statistical information on housing. Funds provided under the NHA support the Canadian Housing Design Council, the Community Planning Association of Canada and the Canadian Council on Urban and Regional Research.

14.2 Federal housing activity, 1974

A variety of economic factors in Canada and throughout the world seriously affected the housing market in 1974, resulting in a marked decline in housing starts. By the end of the year, however, house-building activity showed some improvement. After three years of steady growth housing starts across Canada declined by 17% during 1974 to 222,123 dwelling units,

compared with the record total of 268,529 starts in 1973. Multiple-unit dwellings, such as apartment buildings, showed the greatest decline — 30% while starts on single-family houses were down by 7%. The construction of semi-detached houses and duplexes declined by 17%, and row housing was down 14% (Table 14.1).

While starts were down, the number of completions reached a record level of 257,243 during 1974, a result of the high volume of starts in the previous year. Most of the increase in completions was in single-family and row housing. Housing starts financed directly by CMHC during 1974 showed a modest increase of 5% to 30,352, due principally to a substantial increase in the Assisted Home-Ownership Program, which produced 11,773 starts.

The average family income of purchasers of NHA-financed houses in 1974 was \$13,538. These incomes were 5% higher than the corresponding averages for purchasers in 1973, in line with the general increase in incomes in 1974. As in previous years relatively few purchasers of NHA homes, 3.6% in 1974 and 5.9% in 1973, were drawn from the lower third of the range of family income. The average age of purchasers of NHA houses was 31.4 years in 1974 compared to 32 in 1973. In 1974, 46.5% of the purchasers had two or more children and 30.8% had previously been home-owners.

The average cost of NHA-financed single-family dwellings purchased in 1974, including many started in the previous year, was \$27,065. On these houses purchasers provided down payments averaging \$5,000. Compared with 1973 these payments represented an increase of 10.0% in cost and 12.0% in down payment. As in other years most of the NHA-financed single-family houses purchased in 1974 were bungalows, representing 72.7% of the total compared with 68.9% in 1973. The proportion of split-level dwellings decreased from 27.0% to 23.7%. Two-storey dwellings dropped from 3.5% in 1973 to 2.8% in 1974. Of these dwellings about 95.9% had one to three bedrooms and the remainder had four or more. Types of dwelling units started in selected metropolitan areas in 1973 and 1974 are shown in Table 14.2.

14.2.1 Direct and insured lending

Direct loans. CMHC may make direct loans in the open market for both home-ownership and rental housing if, in the opinion of the Corporation, loans are not available through approved lenders. Loans are made to any eligible home-owner applicant but direct loans to builders are normally subject to a requirement that the houses be pre-sold to suitable buyers.

A total of \$40.0 million in direct Corporation loans to the private sector was approved during 1974. This represented 1.9% of the total NHA loans for home-ownership and rental loans during the year. In the private sector, the Corporation's lending continued to be directed mainly to families with moderate incomes in smaller centres and resource areas in which mortgage financing is difficult to obtain. The Corporation made loans for 542 new family housing units in 1974, compared to 898 units in 1973 and 6,046 units in 1972.

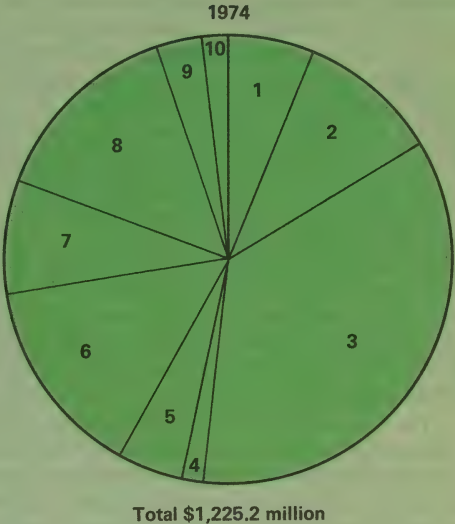
Direct loans and grants are also provided under the Assisted Home-Ownership Program to help low- and moderate-income families to purchase a home without spending more than 25% of their gross income on shelter. Assistance is provided in accordance with a graduated scale of adjusted family incomes. As family income decreases assistance increases. Following interest rate adjustments down to CMHC's lowest rate a maximum grant of \$600 a year is available to further reduce monthly charges. Generally the program will serve families in the income range of \$6,000 to \$11,000 per annum, although this figure can range up to \$16,000 in high-cost areas.

Since the inception of the program 25,181 families have purchased homes with help from the Assisted Home Ownership Plan, involving \$568 million in loans and contributions. Overall activity has supported the purchase of 9,129 existing housing units and 16,052 new homes. In the fall of 1974 the program was directed exclusively to new construction to encourage housing starts and to increase employment opportunities in house-building.

CMHC may make loans to any organization, corporation or individual to assist in financing the construction of low-rental housing projects. In addition to self-contained units, development may include hostel or dormitory accommodation for elderly and low-income individuals. Loans may be made for a maximum of 95% of the lending value established by CMHC. The repayment period may not exceed the useful life of the project or a maximum of 50 years. Interest rates are established by the Governor in Council and specifications as well as financing and operating arrangements must be approved by the Corporation. In 1974, NHA

CMHC commitments under the NHA, 1974

1.	\$74.5 million 6.1%	Low-income rental
2.	\$124.7 million 10.2%	Non-profit housing
3.	\$435.2 million 35.5%	Assisted home-ownership
4.	\$19.8 million 1.6%	Co-operative housing
5.	\$58.1 million 4.7%	Federal-provincial housing
6.	\$177.4 million 14.5%	Public housing
7.	\$101.4 million 8.3%	Land Assembly
8.	\$171.9 million 14.0%	Sewage Treatment
9.	\$39.6 million 3.2%	Home-ownership
10.	\$22.6 million 1.9%	Other



Source: Central Mortgage and Housing Corporation.

loans were approved to entrepreneurs and other private borrowers for a total of \$75 million. This provided 3,472 housing units for individuals and families of low- and moderate-income. These figures include six loans amounting to \$866,000 made to Indian bands for 51 housing units and 26 hostel beds on reserves. These loans were made under the 1970 agreement between the Corporation and the Department of Indian Affairs and Northern Development which provides for a form of loan guarantee by the Minister. Since the agreement came into effect 34 loans have been made.

Long-term loans are available to a province, a municipality or their agencies, a hospital, school board, university or college, co-operative association or charitable corporation for construction of student housing projects, or to acquire existing buildings and convert them into student residences. In all cases the government of the province concerned must approve the loan. CMHC may lend up to 90% of the project cost subject to maximum amounts of \$30,000 for a single dwelling unit, \$20,000 for a self-contained apartment and \$8,000 for each student housed in dormitory or hostel accommodation. The term of the loan may not exceed 50 years or the existing life of the building, whichever is less. The interest rate is prescribed by the Governor in Council. During 1974, 12 loans amounting to \$4.0 million were approved to provide accommodation for 813 students. This brought to 348 the number of student housing loans approved during the 13 years this legislation has been in effect, and a total of \$441 million loaned. Altogether 68,780 single and 7,114 married students and their families have been accommodated under this program.

Insured loans. Insured mortgage loans may be made for both home-ownership and for rental housing. They are normally available from approved lenders to individual home-owner applicants, to builders constructing houses for sale or rent and for some special groups such as co-operative housing associations and farmers. Insured loans are also available for the purchase, improvement, re-financing or sale of existing dwellings. The conditions governing NHA loans are contained in National Housing Loan Regulations.

Upon application the borrower pays CMHC a fee of \$35 a unit to help defray the costs of examining plans and specifications, determining lending values and conducting compliance inspections during construction. An approved lender requires evidence that a home-owner or home-purchaser is providing at least 5% of the value of the house from his own resources. For the home-owner this equity may be in the form of cash or a combination of cash, land and labour; for the home-purchaser it may be in cash or labour. The regulations require that gross debt service — the ratio of repayments of principal and interest plus municipal taxes to the income of the borrower — should not exceed 30%, but higher ratios may be considered on their merits. The borrower pays an insurance fee which is added to the amount of the loan and is repaid over the term of the mortgage. The fee ranges from seven eighths of 1% to 1.25% of the loan, according to type of unit and timing of mortgage advances. The NHA interest rate is free to find its own level in relation to the open market.

In June 1974, loan maximums for home-ownership of new and existing single-family units to be held under freehold, leasehold or condominium tenure and condominium types in apartment form were set by CMHC on a national, regional or local basis. They vary from \$30,000 to \$40,000 and cover 95% of the first \$31,850 of lending value plus 75% of the balance up to the applicable maximum. For rental accommodation maximum loan levels are: single-family dwellings \$30,000, apartments \$20,000 a unit, hostel beds \$10,000 and student hostels \$8,000 a person accommodated. Maximum loan levels are reviewed quarterly by CMHC. The period of repayment may be up to 40 years for new homes and rental housing. For existing housing this period is the lesser of 40 years or the remaining life of the building.

The investment of \$612 million by the approved lenders for new construction in 1974 was 54.9% below the \$1.3 billion invested in 1973. Loans made in 1974 involved 21,666 units and 2,842 hostel beds, a decrease of 68.9% from the 69,506 units and 4,247 hostel beds financed a year earlier. This decrease in investment by approved lenders is the result of loans to merchant builders dropping by 15,818 units, rental loans by 30,287 units, and home-owner loans by 1,735 units. Approved lenders increased their financing of existing housing from 22,528 units in 1973 to 24,867 units in 1974.

Home improvement loans. CMHC is authorized to give a limited guarantee to chartered banks or approved instalment credit agencies in return for an insurance fee paid by the borrower on loans made for additions, repairs and alterations to existing houses and apartments. A home improvement loan and the balance owing on any existing NHA home improvement loan on the property may not exceed \$4,000 for a one-family dwelling or \$4,000 for the first unit of a duplex, semi-detached or multiple-family dwelling, plus \$1,500 for each additional unit. Loans are repayable in monthly instalments over a period not exceeding 10 years. The maximum rate of interest is restricted to 2.25% above the long-term government bond rate adjusted quarterly to the nearest one eighth of 1%. In 1974 chartered banks and approved instalment credit agencies granted 6,346 loans for home improvement totalling \$18.6 million, compared to 5,861 loans amounting to \$16.2 million in 1973. These lenders reported \$25 million as the outstanding debt on these loans at the end of 1974.

Non-NHA mortgage financing. Conventional and other forms of financing in 1974 grossed \$4.58 billion for 194,688 units as compared to \$5.04 billion for 250,879 units in 1973.

14.2.2 Neighbourhood improvement, residential rehabilitation and urban renewal

Neighbourhood improvement. The Neighbourhood Improvement Program (NIP) authorizes the Corporation to make contributions and loans to municipalities or their agencies to improve the amenities of older run-down neighbourhoods and the housing and living conditions of the residents. It is intended that rehabilitation of the existing housing stock, for which assistance is available under the Residential Rehabilitation Assistance Program, should be an integral part of any project undertaken through NIP.

The Program is operated on the basis of annual agreements with the provinces which set out the criteria whereby municipalities and neighbourhoods may participate. In general, however, it is expected that participating neighbourhoods will have the following characteristics: they will be predominantly residential although they may contain local stores, schools, banks, churches, small businesses and perhaps some non-conforming uses of land; a significant proportion of the existing housing stock will be in need of improvement and repair to comply with minimum standards of health and safety; most of the housing in the

neighbourhood will be occupied by people of low- to moderate-income and the existing social and recreational amenities will be considered inadequate.

The agreements also prescribe the allocation of funds to the provinces for re-allocation to municipalities selected by the province and accepted by the Corporation. Municipalities will, in turn, select neighbourhoods for participation in the program. NIP agreements were signed with all provinces in 1974. The agreements provide for a total of \$48.5 million in federal contributions and \$22.7 million in federal loans. Eighty-seven municipalities have been selected by the provinces to participate and 20 projects had begun by year end.

Site clearance. The Site Clearance Program allows the Corporation to help municipalities acquire and demolish properties outside Neighbourhood Improvement areas where such properties either do not meet minimum housing standards or are being used for a purpose inconsistent with the character of the area. It is designed to assist the efforts of municipalities to enforce uniform minimum standards for existing residential buildings. Land, after acquisition and clearance, is to be used for housing, recreational or social facilities. The Site Clearance Program is also operated through annual agreements with the provinces. The agreements made in 1974 for the Neighbourhood Improvement Program include provision for the Site Clearance Program.

Assistance is also available for the clearance of small pockets of substandard residential and/or non-residential buildings in a community that does not require the assistance procedure of NIP. The assistance involves both federal loans and grants. To qualify, the sum of acquisition and demolition costs of contiguous properties must not exceed \$500,000.

Residential rehabilitation. Loans of up to \$5,000 are available from CMHC to assist in the improvement and repair of substandard dwellings. This assistance is available to home-owners earning \$11,000 a year or less, landlords who agree to rent controls, and non-profit corporations and co-operatives. The program applies in areas participating in NIP, other areas through special agreements with provinces and to non-profit corporations and non-profit co-operatives in any area. Priority is given to repair of the housing structure and upgrading of the plumbing, electrical and heating systems. The nature and quality of repair work should extend the useful life of the property for about 15 years. Non-profit corporations are eligible for the same assistance as landlords for the repair of family housing units. In addition these corporations may use the assistance for the conversion of existing residential buildings into a greater number of family housing units or into accommodation of the hostel or dormitory type. The funds may also be used to increase the accommodation available in an existing hostel or dormitory. Loans under this program are conditional on the province or municipality adopting and enforcing appropriate occupancy and maintenance standards to ensure that the property will not fall into disrepair again.

By the end of 1974 loans were being made in 18 cities and an additional 25 municipalities were preparing to participate in the program. The average family income of applicants for RRAP assistance in 1974 was \$6,408 and the average cost of rehabilitation \$3,286.

Urban renewal. Since August 1969 no new programs have been established under the urban renewal provisions of the National Housing Act.

14.2.3 Community housing

Co-operatives. Co-operatives are considered to be associations of people, usually incorporated, who group together for a mutual undertaking and agree to take on certain responsibilities and follow certain rules. Co-operative associations for housing are incorporated under provincial legislation. The number of members required to obtain a charter to start a co-operative varies from one province to another, usually between five and seven. Some provinces have special regulations for housing groups. A group of people must be incorporated to obtain a loan under the NHA but incorporation is not necessary to apply to CMHC for start-up funds for a co-operative project. Generally the terms and assistance available to individuals under the Act are also available to groups which are organized in co-operatives. Loans may be obtained for the purchase of existing housing and for the rehabilitation of such housing if necessary. Previously loans for co-operative projects were limited to new buildings.

Co-operative housing is a general term applying to various forms of housing constructed or purchased by groups of people organized to secure housing to be owned by those who

occupy it. In Canada two forms of co-operative housing are now generally known and provided for in the NHA: building co-operatives and continuing co-operatives. The former is made up of a group of people, usually numbering about five to 15, organized to construct houses which they will own individually. The form of ownership is the main difference in the continuing co-operative: the housing continues to be owned indefinitely by all members jointly. A co-operative of this type is usually organized to provide some form of multiple housing and the number of members is ordinarily larger — 25, 50 or more.

A building co-operative organized to construct houses to be owned individually by the members on completion may qualify for loan and grant assistance under the Assisted Home-Ownership Program if the incomes of the members meet the requirements of the Program. A continuing housing co-operative providing accommodation for low-income members may be eligible, under various provisions of the NHA, for start-up funds, for a 100% loan and a 10% contribution if it is a non-profit co-operative, for a loan under the terms and conditions of the Assisted Home-Ownership Program or for loans and grants under the Residential Rehabilitation Assistance Program.

During the year 728 units were approved under co-operative housing arrangements, almost double the 1973 total. The Corporation's support for 1974 activities, provided under the non-profit housing provisions of the NHA, amounted to \$19.8 million. Financial assistance included \$18 million in direct CMHC loans and \$1.8 million in grants to continuing non-profit co-operative associations.

Non-profit. A section of the National Housing Act is designed to make it easier for non-profit housing organizations to develop housing projects for people of limited means, particularly the elderly and the handicapped. A non-profit organization is one in which no part of the income is payable or otherwise available for the personal benefit of any proprietor, member or shareholder. Non-profit organizations may be provincially-municipally owned or constituted exclusively for charitable purposes. The latter group is eligible for start-up funds, not exceeding \$10,000 to ensure that the group is able to properly prepare a loan application to CMHC and to cover expenditures for research and organization, incorporation, site selection, options, professional fees and the technical skills required to put the project in place, selection of tenants and other costs.

Both categories of non-profit borrowers may apply to CMHC for a contribution not exceeding 10% of the cost of the project as estimated by CMHC at the time of application, less any forgivable federal residential rehabilitation loan or federal grants such as those made under the Local Initiatives Program or by the Department of National Revenue in the form of tax refunds. The cost may include both real estate and hard furnishings of the sort used in community buildings for social and recreational purposes. In the case of hostels, hard furnishings would include built-in and non-movable furniture and equipment.

Non-profit organizations formed exclusively for charitable purposes and those which are municipally owned may obtain loans to cover 100% of lending value. In the case of the provincial non-profit organizations, loans to the value of 95% of the lending value are available, with the borrower providing the other 5%. In all cases the 10% contribution from CMHC must be applied against the reduction of the loan. Income limitations will not be imposed on projects sponsored by non-profit organizations which cater to special disadvantaged groups such as the physically and mentally handicapped, the elderly and others whose housing choices in the market are extremely limited. In projects sponsored by non-profit organizations for clients with no special physical or mental disadvantages, income limitations may be required.

In 1974 loans were made to non-profit organizations for 4,388 dwelling units and 3,645 hostel beds for a total of \$125.0 million. The corresponding total for the previous year was \$95.0 million. Loans committed to non-profit organizations during the year supported the provision of low-rent accommodation for the elderly, low-income families and special groups. Included in the special groups category is housing for the mentally retarded, physically handicapped, halfway houses for persons recovering from alcohol addiction, and receiving homes for children who are wards of the courts.

Start-up funds. "Start-up" funds not exceeding \$10,000 a project were introduced in 1973 to assist potential sponsors to develop proposals for low-rental housing to be financed under the

non-profit provisions of the NHA. In 1974 grants totalling \$797,000 were approved to 180 groups and organizations for developments which could result in 60 loans totalling \$37.6 million and involving 3,882 units and hostel beds. Costs covered by the grants include expenditures for incorporation as a non-profit society, professional fees, site selection, land options and administration expenses.

In addition to the "start-up" funds, grants were made available for formal management training in social housing activities and to assist non-profit resource groups offering professional and technical services to community organizations sponsoring NHA-financed housing developments. A total of \$342,476 was approved for these purposes during 1974.

14.2.4 Municipal infrastructure

Since December 1960 the NHA has made funds available to assist in the elimination or prevention of water and soil pollution. CMHC is authorized to make a loan to a province, municipality or municipal sewerage corporation to construct or expand sewage treatment and trunk collector facilities. The loan may not exceed two thirds of the cost of the project and the maximum repayment term is 50 years from date of completion. Interest is set by the Governor in Council. Agreements covering such projects contain a "forgiveness" clause applicable to both the principal of the loan and accrued interest conditional on satisfactory completion. There was a record demand for such loans in 1974, and a total of 313 loans totalling \$171.9 million were made. Additional assistance for communities with a population of less than 5,000 was introduced by relaxing the definition of a trunk collector. In 1974 the Municipal Infrastructure Program (previously the Sewage Treatment Program) was re-organized. The Program was also expanded to include research into municipal sewage treatment.

14.2.5 Public housing

Under the NHA and complementary provincial legislation the federal and provincial governments may enter into partnership agreements to build rental housing for families and individuals with low incomes or to purchase and rehabilitate existing housing for this purpose. Hostel or dormitory accommodation may also be included. The federal government pays up to 75% of the capital costs and the provincial government the remainder, although the latter may call upon the municipality concerned to bear a portion of the provincial share. Rents for units in federal-provincial projects are related to the tenant's family income and size of family. Operating deficits are shared on the same contractual basis as the capital costs.

As an alternative CMHC may make long-term loans to a province, or to a municipality or public housing agency with the approval of the province, to provide public housing. Projects may consist of new construction or the renovation of existing buildings and include dormitory and hostel accommodation as well as self-contained family units. Loans may be up to 90% of the total cost as determined by CMHC and for a term as long as 50 years, but not in excess of the useful life of the development. The maximum that may be borrowed for a fully-serviced apartment is \$20,000, and for hostels \$10,000 for each person accommodated. For a house the maximum is \$30,000. In addition 15% of the maximum may be provided as an additional loan for added amenities which go beyond strictly residential use. The interest rate is set by the Governor in Council. If this alternative is selected federal grants may be made covering up to 50% of losses incurred in the operation of public housing projects for a period not exceeding the term of the loan. Annual subsidies are shared by CMHC and the province concerned.

During 1974 loans totalling \$177.4 million were approved to provide 9,239 public housing units. This covered 90% of the cost of construction or acquisition of the units. Comparable figures for 1973 are 14,114 units, 14 hostel beds and \$199.7 million. Under the federal-provincial cost-sharing arrangements a further \$58.1 million was approved for 3,346 housing units as compared to 3,327 units and \$51.8 million for 1972. The federal government may share in the operating deficits of public housing projects equally under the loan arrangement and accept 75% of the costs under the partnership arrangement. The federal share of subsidy payments for the 119,000 units occupied at the end of 1974 is estimated to be \$87.0 million.

Provinces, municipalities or their agencies may enter into agreements with the owners of private accommodation under which the latter agree to rent to low-income families at rentals based on income. The federal government provides 50% of the difference between the subsidized rent paid by the tenant and the full market rent normally charged by the owner. Under this agreement, a total of 5,989 units have been approved.

Included in the federal-provincial cost-sharing arrangements is a program of housing for sale. Subsidy assistance for home-ownership has been provided under a variety of arrangements in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, Saskatchewan and British Columbia. Under these arrangements mortgage payments are related to the incomes of the purchasers, with the federal government providing 75% of the difference between the mortgage payment made by the purchaser and the actual amount required to retire the loan and interest. During the year 1,683 units were provided under these arrangements, for a total of 7,439 to date.

14.2.6 Land assembly and new communities

The federal and provincial governments may enter into an agreement to provide for a land assembly project which involves the development of land for housing. The federal government pays up to 75% of the cost and the provincial government the remainder. The latter may call upon the municipality concerned to bear a portion of the provincial share. As an alternative loans of up to 90% of the cost of assembling and servicing land for public housing are available at a preferential interest rate to provinces, municipalities and their agencies.

Under federal-provincial partnerships nine projects for 1,548 residential building lots and two projects for land banks with a total area of 548 acres were approved in 1974. Since the inception of the program in 1948, 33,449 lots have been authorized for development. Of these, 24,064 have been offered for sale and 22,601 have been sold. A total of 31,861 acres have been authorized for acquisition in land banks. Of lands actually acquired, 20,411 acres remain to be developed. Section 42 of the National Housing Act authorizes the Corporation to make loans to provinces and their agencies for up to 90% of the cost of assembling and developing land for housing. During 1974, 135 loans amounting to \$80.6 million were approved under this Section.

The NHA also provides assistance through CMHC for new communities either through cost-sharing arrangements between federal and provincial governments or through loans with certain forgiveness elements to the provinces or their designated agencies. CMHC may participate in the acquisition of land for the new communities, including land for transportation corridors and open space in or around the communities, planning the communities and designing and installing services. Both the federal commitment to the loan arrangement and the federal-provincial cost-sharing agreement are dependent upon the province satisfying several points: the agency or corporation responsible for the planning and development of the new community must be designated, and CMHC must be satisfied that measures will be taken to allow the public to receive any economic benefits that may accrue from selling the lands and services to the private sector in the new community, and that acceptable plans for urban growth, including the location, size and order of development of other new communities, have been established. A federal-provincial agreement between CMHC and the government of any province will determine which new community will receive assistance.

The amount of capital costs, profits and losses to be shared by the Corporation shall not exceed 75% of the total capital costs, profits and losses of the project. A loan to a province or its designated agency may be made in an amount of 90% of the cost as determined by CMHC for the acquisition of land for the new communities, including land for transportation corridors and open spaces in or around the communities, for planning the communities, and for the design and installation of the services. The term of the loan will be 25 years. This term may be extended to 50 years for that part to be used for land and services leased on a long-term leasehold basis for private use.

To encourage the rapid development of recreational and social facilities CMHC may forgive up to 50% of that portion of the loan covering acquisition of land for these purposes. A forgiveness of an amount not exceeding 50% of the part of the loan used for initial planning costs may also be approved. This would include salaries, accommodation and expenses of the new community development corporation or agency and necessary consultants to provide over-all administration, site investigations, surveys, background research, concept plans, over-all development plans as may be required by the province and detailed phasing elements of layout and urban design.

14.2.7 Mortgage administration

The NHA mortgage debt outstanding at the end of 1974 amounted to \$15.7 billion, representing 29.5% of the mortgage debt in Canada. With a portfolio of over \$6.1 billion, CMHC continued to hold the largest single share of the NHA mortgage debt. The chartered banks held \$3.2 billion, life insurance companies held \$2.0 billion and other approved lenders held \$2.3 billion. The remainder was held by pension funds and purchasers in the secondary mortgage market. In 1974 sales of insured mortgages by approved lenders totalled \$590 million. Of this amount \$101 million was purchased by various pension funds. The number of NHA loans in arrears decreased in 1974. As at December 31, 1974 there were 2,206 loans (0.29% of mortgages outstanding) in arrears for three months or more compared with 2,527 loans (0.37%) a year earlier.

The Mortgage Insurance Fund paid \$19.8 million on 588 claims during 1974, a substantial decrease from 1973 when \$40 million was paid on 1,165 claims. Claims paid in 1974 represented 0.16% of the \$12.7 billion insured mortgages outstanding. Arrears on all Corporation-owned property as at December 31, 1974 totalled 218 accounts, 1.8% of the total number of rental units. The vacancy rate at December 31, 1974 was 5.6% of the total number of rental units.

14.3 Dwellings and household facilities

Over the past 30 years decennial censuses of Canada have provided a comprehensive inventory of the nation's dwelling stock in the form of a complete housing census taken in conjunction with the censuses of population and agriculture. Detailed information on this subject covering the 1941-71 period may be found in the relevant census volumes and reports. Summary data from the 1971 Census included here relate to a selection of the housing characteristics for which data were collected. More detailed information on these characteristics, including cross-classifications of the data, may be obtained from the User Inquiry Service of Census Field, Statistics Canada.

14.3.1 Recent trends

The 1971 Census recorded a total of 6 million occupied dwellings in Canada. (A dwelling, for census purposes, is a structurally separate set of living quarters with a private entrance either from outside the building or from a common hall or stairway inside.) This total represented a 32.5% increase in dwellings since the 1961 Census compared to an increase in population of 18.2%. It is apparent that, despite slower population growth resulting from declining birth rates and lower immigration, the need for dwellings has continued to increase at a rate comparable to the record growth rates of the 1950s. This is attributable largely to the increased rate of family formation as children of the postwar "baby boom" reached working and marriageable age, and to the establishment of increasing numbers of one- and two-person households in both younger and older age groups. These trends in housing growth rates, including comparisons over the past 20 years for such characteristics as type of dwelling, tenure, and number of rooms are summarized in Table 14.3.

14.3.2 Dwelling types, tenure and size

Dwelling types. Single detached homes continued to be the predominant type of housing accommodation in Canada in 1971, although their relative numbers have gradually declined in favour of multiple-type dwellings. Twenty years earlier, at the 1951 Census, two thirds of all dwellings were single detached but this ratio gradually dropped to 59.5% by 1971. In the 1961-71 period single detached homes increased by 20.6%, whereas multiple-type units, i.e. single attached (double and row houses), apartments, flats, etc., grew at the significantly higher rate of 52.9%.

Table 14.4 shows the distribution of the two broad dwelling-type classes in 1971 by province and by metropolitan area. Saskatchewan had the largest proportion of single detached homes, 81.5% of its occupied dwellings being in this category. Almost 60% of Quebec's dwellings were multiple-type units (apartments, single attached, etc.), and only 40% were single detached, by far the lowest proportion among the provinces. The distribution within the major metropolitan centres reflected these provincial ratios in general terms, except that in most cases the proportions of multiple-unit dwelling types were considerably higher than for

the province as a whole. This was particularly evident in Montreal and Toronto, where only 23.7% and 45.9%, respectively, of all occupied dwellings were single detached homes.

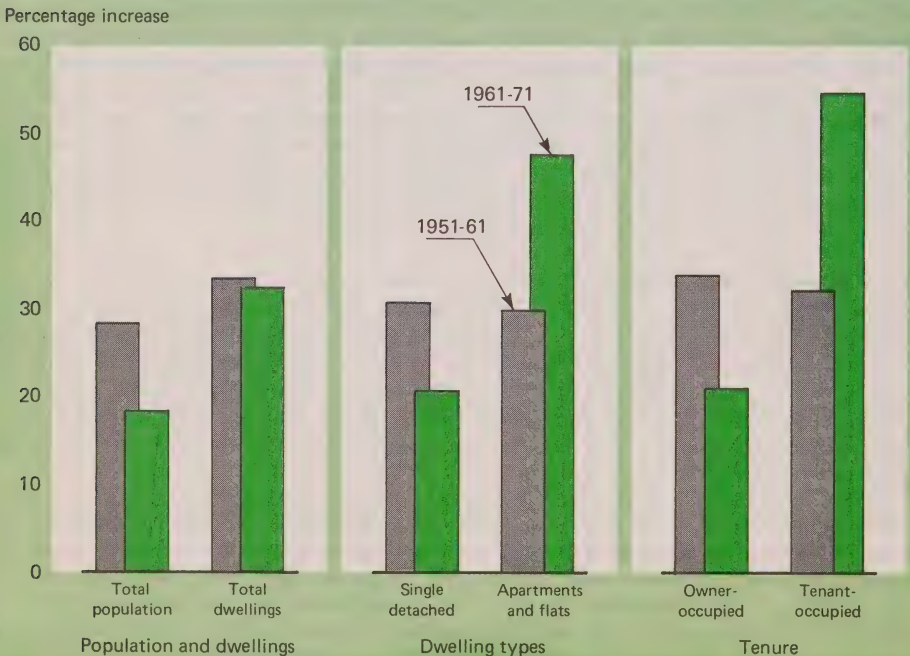
Tenure. The recent trend toward apartment living and higher density accommodation has resulted in a significant increase in the number of rented dwellings (from 34.0% of all dwellings in 1961 to 39.7% in 1971), reversing an earlier trend which had seen the rate of home-ownership increase steadily from 56.7% of all homes in 1941 to 66.0% in 1961.

As in the case of dwelling types, there was considerable variation among provinces in the proportions of owned dwellings in 1971, ranging from a low of 47.4% in Quebec to a high of 80.0% in Newfoundland. Table 14.5 shows that the swing toward tenant occupancy in the 1961-71 period was characteristic of all provinces, and at a fairly uniform rate. However, the trend was less marked in New Brunswick and Quebec, where the decline in the percentage of home-owners between 1961 and 1971 was not as sharp as in the other provinces.

Home-ownership is a characteristic which varies greatly between rural and urban areas and is generally in inverse ratio to the size of the community. For example, in the very large urban agglomerations of 500,000 population and over, only 46.1% of all dwellings were owner-occupied in 1971, compared with 63.2% for the urban size-groups under 100,000 population and 82.0% in rural areas. Among the various census metropolitan areas, the eastern centres of Halifax, Saint John, Montreal, Quebec and Ottawa-Hull showed the lowest percentages of home-ownership and the highest tenancy rates.

Dwelling size. Despite the high increase in apartment rental accommodation during the 1961-71 decade as compared to owner-occupied single homes, the average size of Canadian dwellings showed a slight increase from 5.3 to 5.4 rooms. Not all provinces followed this pattern, however, and, as Table 14.6 shows, there was a decline in the average number of rooms per dwelling in all provinces east of Ontario, with increases in Ontario and throughout the West. Throughout the nation as a whole, Prince Edward Island had the highest average in 1971 at 6.1 rooms per dwelling, and the Yukon Territory and Northwest Territories the lowest

Percentage increases in total population and dwellings by type and tenure, 1951-71



at 4.3. A “crowded” dwelling, for census purposes, is considered to be any dwelling in which the number of persons exceeds the number of rooms. Using this rough measure, the number of crowded dwellings decreased by 24.2% in the decade between 1961 and 1971. Perhaps even more significant is the fact that the number of crowded dwellings fell from 16.5% of the total housing stock in 1961 to only 9.4% in 1971. This dramatic improvement, which was only slightly apparent in the 1951-61 period, appears to result from both a decline in the average number of persons in a household and an increase in the average number of rooms in a dwelling, with the former likely exerting the greater influence.

Provincially, the smallest proportions of crowded dwellings in relation to total housing stock were in Ontario and British Columbia, where only 6.8% of all dwellings had less than one room per person in 1971. Proportions were highest in Quebec and Nova Scotia (12.4%), Newfoundland (23.6%) and the Northwest Territories and the Yukon Territory (30.7%).

14.3.3 Period of construction and length of occupancy

Period of construction. Figures from the 1971 Census for occupied dwellings indicate that 28.8% of the occupied housing stock was built after 1960. Consistent with the increase in rented dwellings since 1961, the proportion of rented dwellings in 1971 which were built after 1960 was 34.0%, compared to 25.4% for owned dwellings. The proportion of dwellings built after 1960 was particularly low in rural farm areas, at 11.6%.

Table 14.7 shows the percentage distribution in 1971 of period of construction by province and by census metropolitan area. There were significant variations from province to province in the proportion of new dwellings. The lowest percentages of dwellings built after 1960 were found in the Atlantic provinces, Prince Edward Island having the lowest at 19.0%. Newfoundland was an exception, however, its 28.6% being close to the national average. Figures above the national average were found only in Alberta, British Columbia, and the Yukon Territory and Northwest Territories, which reported, respectively, 34.5%, 35.3%, and 58.4% of dwellings built after 1960. Values for census metropolitan areas ranged from 19.3% for Windsor to 40.9% for Edmonton.

Length of occupancy. The 1971 Census data on length of occupancy of household heads, displayed in Table 14.7, provide an indication of the mobility of Canadians. Of all household heads in 1971, 66.8% had lived for 10 years or less in the dwelling in which they were enumerated, and 17.8% for less than one year — little changed from the 68.6% and 15.3% respectively recorded in 1961. Length of occupancy was greatest in rural farm areas, where 65.6% of household heads had occupied the same dwelling for more than 10 years.

The pattern of provincial variation for length of occupancy was similar to that for period of construction. The proportion of household heads occupying their present dwelling for 10 years or less was lowest in the Maritimes, ranging from 50.3% in Prince Edward Island to 55.0% in New Brunswick. The highest percentages were 70.6% in Alberta, 74.1% in British Columbia, and 90.7% in the Yukon Territory and Northwest Territories. For census metropolitan areas the range extended from 59.5% for Windsor to 76.1% for Calgary and 76.2% for Edmonton. Fully 25.7% of household heads in Calgary had occupied the dwelling in which they were enumerated in 1971 for less than one year.

14.3.4 Values, rents and mortgages

Values. The 1971 Census required householders in owner-occupied non-farm dwellings to estimate the market value of their homes. Table 14.8 presents median values of single detached dwellings by province and by metropolitan area. The 1971 median value of \$19,020 represented a 72.6% increase over the \$11,021 in 1961. The median value in rural areas was \$10,310, compared to \$26,902 for urban centres with populations of 500,000 and over.

Median values in the provinces ranged from \$7,828 in Newfoundland to \$23,768 in Ontario. The Maritime provinces also showed extremely low values, as did the Yukon Territory and Northwest Territories. Only Alberta and British Columbia joined Ontario in having median dwelling values above the national figure. Among the census metropolitan areas, Chicoutimi-Jonquière's median value of \$15,489 was the lowest. Toronto's at \$32,408 was highest followed by Vancouver where the median value was \$26,702.

Rents. The monthly cash rent paid was reported for tenant-occupied non-farm dwellings in the 1971 Census, and the national average at that time was situated at \$110. This was 69.2%

higher than the \$65 average in 1961. The average rent recorded in rural areas, \$71, was much lower than the \$122 in urban agglomerations of 500,000 population and over.

Table 14.8 shows average cash rent by province and by metropolitan area. Among the provinces, Prince Edward Island had the lowest rents, averaging \$86, while Ontario's average of \$129 was the highest. As was the case for median dwelling values, only Alberta and British Columbia along with Ontario were above the national average. Again, like dwelling values, Toronto had the highest average cash rent among the census metropolitan areas, \$151, while Chicoutimi-Jonquière shared last place with Saint John, each with an average cash rent of \$83.

Mortgages. Householders in owner-occupied non-farm dwellings in the 1971 Census were asked if there were one or more mortgages on their dwelling, and the type of holder of the first mortgage. These data, like those on dwelling values, were tabulated for single detached dwellings. Table 14.8 shows the percentage of mortgaged dwellings by province and by metropolitan area.

In 1971, 52.8% of single detached owner-occupied non-farm dwellings were mortgaged, compared to 45.5% in 1961. The proportion was only 32.4% in rural areas, compared to 66.4% in the largest urban centres. For the mortgaged dwellings, the holder of the first mortgage was a bank or an insurance, loan, trust or mortgage company in 62.6% of the cases. The first mortgage was held by a private individual 19.4% of the time and by government only 9.8% of the time. There was considerable variation from province to province in the proportion of mortgaged dwellings. Newfoundland had by far the lowest proportion, 17.4%, while Alberta led with 59.1%. Among census metropolitan areas the extremes were registered by St. John's (45.5%) and Montreal (75.5%).

14.3.5 Heating fuel

In view of world energy shortages, census data on home heating fuels are of particular interest. The 1971 Census data show that 57.1% of occupied Canadian dwellings were heated principally by oil or other liquid fuels, while 32.1% used gas as the main heating fuel. The major change since 1961 was a strong increase in the proportion of dwellings heated by gas, from 18.8% to 32.1%. This was offset by a correspondingly large decrease, from 10.6% to just 1.1%, in the proportion of dwellings using coal or coke as the main heating fuel. The category "other fuels" declined from 14.3% to 9.8% as a result of an increase from 0.7% to 5.8% in the proportion of dwellings which were electrically heated and a decrease from 13.0% to 3.5% in the proportion of dwellings heated by wood. The use of gas as a heating fuel was less predominant in rural areas, 13.4% compared to 37.2% in urban areas.

Table 14.9 gives the percentage distribution of dwellings by principal heating fuel, by province and by metropolitan area. There was a sharp difference between Quebec and Ontario in the proportions of dwellings heated principally by oil and by gas. In Quebec and the Atlantic provinces the proportion using gas as fuel was never higher than 8.0% (Quebec), while the proportion using oil was 79.3% or higher in all cases. In Ontario and the western provinces the proportion using gas was never lower than 37.1% (Ontario) and went as high as 83.6% for Alberta, while the proportion using oil was never above 54.0% and was as low as 9.4% in Alberta. Among census metropolitan areas, Victoria was an exception to this east-west rule, its 2.4% of dwellings heated principally by gas being one of the lowest proportions in the country.

14.3.6 Household facilities and equipment

Census data. Decennial censuses provide an inventory of a variety of household facilities and equipment to measure advances in living standards and to provide data for market research. The 1971 Census covered items such as plumbing and sanitary facilities, heating equipment, and accessories such as refrigerators, freezers, dishwashers, clothes dryers and television sets. Only the data on the first of these subjects, i.e. the incidence of homes with running water, bath and toilet facilities, are shown by province in Table 14.10. More recent information on other items is available from annual sample surveys (see below).

Continuing the rising trend in recent decades, there was again a marked improvement in the number of dwellings equipped with plumbing and sanitary facilities during the 1961-71 period. Dwellings with running water increased from 89.1% of all dwellings in 1961 to 96.1% in 1971. Similarly, households reporting a bath or shower for their exclusive use advanced from 77.1% to 90.8%, and households with exclusive use of a flush toilet from 79.0% to 93.1%.

Although nine of every 10 Canadian dwellings were supplied with these amenities in 1971, in rural localities the ratios were considerably lower than the national percentages. Table 14.10 shows that in rural areas of the Prairie provinces, for example, one of every three dwellings still lacked running water and installed bath or shower facilities, and closer to one of every two lacked a flush toilet. Rural Newfoundland showed similar ratios, but in the Yukon Territory and Northwest Territories only about one rural dwelling in three was so equipped.

Annual estimates. Table 14.11 presents some summary statistics derived from the latest in a series of annual sample surveys conducted by Statistics Canada. The survey was carried out in conjunction with the April 1974 labour force survey and about 30,000 households, chosen by area sampling methods, were included in the sample. Unlike decennial censuses, the sample survey cannot produce data for the smaller localities and areas, but much of the information shown in Table 14.11 for Canada is available also for individual provinces and selected metropolitan areas. Moreover, a much wider range of household facilities and equipment items is covered in the annual survey than can be accommodated in a general census.

Table 14.11 shows that possession of colour television sets by Canadian households increased more than any other household facilities. Between April 1973 and April 1974, households with colour TV sets increased to 44.5% of the total from 33.2%, while possession of black and white TV sets decreased to 73.3% compared to 79.2% a year earlier. During the same period, ownership of automatic dishwashers increased 2.2% to reach a level of 12.9% while that of floor polishers decreased between May 1972 and April 1974 to 48.3% from 53.4%.

In April 1974, more than one household in 10 reported air conditioning facilities: 495,000 households owned window-type air conditioners and 166,000 households were equipped with central unit air conditioners.

14.4 Construction

14.4.1 Value of construction work

The data on the construction industry represent the estimated total value of all new and repair construction performed by contractors and by the labour forces of utility, manufacturing, mining and logging firms, government departments, home-owner builders and other persons or firms not primarily engaged in the construction industry. Table 14.12 shows the value of new and repair construction work and Table 14.13 the value of such work performed by contractors and others during the period 1970-74, preliminary expenditures for 1973 and intentions for 1974. Table 14.14 gives estimates of total expenditures in Canada on each type of construction for which information is available.

Principal statistics of the construction industry are shown by province and for contractors, utilities, governments and others in Table 14.15. The statistics given for Canada as a whole may be considered as relatively accurate but those for individual provinces and by class of builder are approximations only. All estimates given for cost of materials used are based on ratios of this item to total value of work performed, derived from annual surveys of construction work performed by contractors and others and applied to the total value-of-work figures. Estimates of labour content are similarly based but, in addition, are adjusted to include working owners and partners and their withdrawals. Although the ratios were calculated in some detail by type of industry, still further refinements are required. There are also some difficulties in obtaining the precise location of projects undertaken or to be undertaken by large companies operating in a number of provinces. However, if used with these qualifications in mind, the Table provides useful estimates.

Chapter 21 includes detailed price index numbers of construction and capital goods, which measure price changes in residential and non-residential building materials and changes in construction wage rates; price indexes of highway construction which show annual costs to provincial governments in contracts awarded for highway construction as a percentage of prices paid in 1961; and price indexes of electrical utility construction (distribution systems, transmission lines, transformer stations) which provide an estimate of the impact of price change on the cost of materials, labour and equipment used in constructing and equipping such utilities.

14.4.2 Building permits issued

The estimated value of proposed construction is indicated by the value of building permits issued. Figures of building permits are collected from approximately 1,500 municipalities across the country and are available for individual municipalities, for metropolitan areas, for provinces and for economic areas in Quebec, Ontario and Manitoba.

The total value of permits issued for building construction in 1974 was \$9,280.1 million, a figure 8.4% higher than in 1973. Residential construction value decreased by 0.4% and over-all non-residential construction value increased by 23.9%, reflecting an increase of 54.1% in the industrial, 16.4% in the commercial, and 12.8% in the institutional and government construction sectors.

Permit values rose in all provinces except Newfoundland which showed a slight decrease. The value of building permits issued in each province in the years 1973 and 1974 is given in Table 14.16, in each of 50 municipalities in Table 14.17 and in each of the 22 metropolitan areas in Table 14.18. These metropolitan areas made up 70.0% of the 1974 total for Canada.

14.5 Capital expenditures

A survey carried out early in 1975 of capital spending intentions of all sectors of the Canadian economy indicated that capital outlays amounting to \$36.9 billion were planned for 1975. The survey covered business establishments, educational and other institutions and governments at all levels. An estimate of outlays on new dwellings is also included in the total. This total represents a 13.7% increase over the 1974 level of \$32.5 billion.

Capital outlays for new construction are expected to reach \$23.0 billion in 1975, an increase of 12.6% over the 1974 program of \$20.5 billion. The previous rate of increase for new construction was 20.9% and 17.2% achieved in 1974 and 1973 respectively. The smaller increases in this area in 1975 result mainly from a 3.7% decline expected in residential construction based upon a level of 210,000 starts during 1975. Non-residential construction on the other hand is registering an increase of 21.0% over 1974.

Acquisition of new machinery and equipment during 1975 is expected to amount to \$13.8 billion, 15.5% above the 1974 total of \$12.0 billion. Further appraisal of machinery purchases during 1973 and 1974 showed the 1974 spending to be 6.0% higher than indicated at mid-year and 23.7% over 1973.

Table 14.19 shows the trend in capital spending over the years 1966-75 in both current and constant (1961) dollars. Table 14.20 summarizes capital and repair expenditures by economic sector and Table 14.21 contains details of the manufacturing, mining and utilities sectors for the years 1973-75. A summary of the capital expenditures in each province and the territories is given in Table 14.22. Such expenditures represent gross additions to the capital stock of the province or territory and are a reflection of economic activity in the area, although the actual production of these assets may generate major employment and income-giving effects in other regions. For example, the spending of millions of dollars on plants and equipment in western Canada may generate considerable activity in machinery industries in Ontario and Quebec as well as construction activity in the western provinces.

Sources

14.1 - 14.2 Central Mortgage and Housing Corporation.

14.3 Census Characteristics Division, Census Field, Statistics Canada.

14.4 - 14.5 Construction Division, Industry Statistics Branch, Statistics Canada.

Tables

.. not available
 ... not appropriate or not applicable
 - nil or zero
 -- too small to be expressed

e estimate
 p preliminary
 r revised
 certain tables may not add due to rounding

14.1 Dwelling units¹ started and completed, by type of financing, 1972-74, and by region, 1973 and 1974

Year and region	Dwelling units started		Conven- tional institu- tional loans	All other financing	Total	Dwelling units completed
	CMHC	Approved lenders loans				
1972	36,939	96,033	64,250	52,692	249,914	232,227
1973	29,027	75,469	93,641	70,392	268,529	246,581
1974	30,352	31,057	75,000	85,714	222,123	257,243
1973						
Atlantic provinces	3,741	1,601	9,815	6,765	21,922	18,837
Quebec	7,883	16,590	14,563	20,514	59,550	55,260
Ontario	10,624	38,042	41,966	19,904	110,536	98,262
Prairie provinces	4,635	12,936	11,957	9,366	38,894	39,618
British Columbia	2,144	6,300	15,340	13,843	37,627	34,604
1974						
Atlantic provinces	3,916	593	7,249	6,356	18,114	19,526
Quebec	8,343	7,798	14,272	21,229	51,642	58,596
Ontario	10,079	14,453	30,723	30,248	85,503	104,360
Prairie provinces	4,635	5,879	12,082	12,848	35,444	40,221
British Columbia	3,379	2,334	10,674	15,033	31,420	34,540

¹Excludes the Yukon Territory and Northwest Territories.

14.2 Dwelling units started in metropolitan areas, large urban centres and urban agglomerations, 1973 and 1974

Area (1971 Census)	Dwelling units started					Row	Apartment; other
	1973	1974	Total	Single de- tached	Semi- de- tached and duplex		
METROPOLITAN AREAS	169,118	133,413	57,124	7,740	11,906	56,643	
Calgary	6,981	6,487	5,229	246	356	656	
Chicoutimi—Jonquière	1,581	1,463	937	48	—	478	
Edmonton	7,384	5,362	3,486	358	843	675	
Halifax	4,181	3,095	1,264	100	202	1,529	
Hamilton	8,708	5,968	2,155	286	822	2,705	
Kitchener	5,054	4,085	1,347	384	795	1,559	
London	3,872	3,311	1,249	146	724	1,192	
Montreal	30,700	24,758	11,795	843	426	11,694	
Ottawa—Hull	15,511	9,709	1,970	686	1,312	5,741	
Quebec	4,648	3,209	2,425	98	—	686	
Regina	1,366	2,271	1,596	12	88	575	
Saint John	1,085	1,139	621	60	72	386	
St. Catharines—Niagara	3,937	3,233	1,807	408	374	644	
St. John's	1,705	1,876	1,161	94	494	127	
Saskatoon	1,342	1,232	1,172	18	—	42	
Sudbury	933	449	374	28	—	47	
Thunder Bay	1,355	874	623	68	48	135	
Toronto	37,697	29,580	6,110	2,552	4,071	16,847	
Vancouver	17,334	14,452	6,658	536	909	6,349	
Victoria	4,013	2,630	1,270	54	59	1,247	
Windsor	2,033	2,602	1,210	158	24	1,210	
Winnipeg	7,698	5,628	2,665	557	287	2,119	
LARGE URBAN CENTRES AND URBAN AGGLOMERATIONS	19,129	16,565	8,479	934	1,271	5,881	
Brantford	1,491	821	452	52	127	190	
Cornwall	571	367	185	20	—	162	
Drummondville	353	316	164	6	—	146	
Guelph	972	1,776	479	48	414	835	
Kamloops	963	939	653	34	85	167	
Kingston	1,634	636	513	26	—	97	
Lethbridge	740	781	399	62	—	320	
Moncton	1,583	1,377	682	12	—	683	
North Bay	964	429	204	62	94	69	
Oshawa	1,821	1,589	356	222	429	582	
Peterborough	505	850	405	2	23	420	
Prince George	1,774	1,254	1,029	92	67	66	
St-Jean	562	747	343	6	—	398	
St-Jérôme	...	...	...	...	...	...
Sarnia	894	811	459	122	32	198	
Sault Ste Marie	767	776	453	82	—	241	
Shawinigan	301	235	199	6	—	30	

14.2 Dwelling units started in metropolitan areas, large urban centres and urban agglomerations, 1973 and 1974 (concluded)

Area (1971 Census)	Dwelling units started				
	1973	1974	Single detached	Semi-detached and duplex	Row Apartment; other
		Total			
Sherbrooke	629	347	184	8	155
Sydney/Sydney Mines	944	817	591	40	186
Timmins	416	342	292	22	28
Trois-Rivières	1,245	1,355	437	10	908
Valleyfield	....	....	....	....	....
Other areas	80,282	72,145	56,540	2,349	11,501
Canada ¹	268,529	222,123	122,143	11,023	74,025

¹Excludes the Yukon Territory and Northwest Territories.

14.3 Summary of housing characteristics, censuses of 1951, 1961 and 1971

Item		1951 ¹	1961	1971	Percentage increase	
					1951-61	1961-71
Total occupied dwellings	No.	3,409,295	4,554,493	6,034,510	33.6	32.5
	%	100.0	100.0	100.0	...	...
TYPE OF DWELLING ²						
Single detached	No.	2,275,615	2,978,501	3,591,770	30.9	20.6
	%	66.7	65.4	59.5	...	...
Single attached	No.	237,655	404,933	679,590	70.4	67.8
	%	7.0	8.9	11.3	...	...
Apartments and flats	No.	885,565	1,151,098	1,699,045	30.0	47.6
	%	26.0	25.3	28.2	...	...
TENURE						
Owned	No.	2,236,955	3,005,587	3,636,925	34.4	21.0
	%	65.6	66.0	60.3	...	...
Rented	No.	1,172,340	1,548,906	2,397,585	32.1	54.8
	%	34.4	34.0	39.7	...	...
SIZE OF DWELLING						
Average rooms per dwelling	No.	5.3	5.3	5.4	17.0	-24.2
Crowded dwellings ³	No.	641,820	750,942	569,495	...	...
	%	18.8	16.5	9.4	...	...

¹Excludes the Yukon Territory and Northwest Territories.

²Excludes mobile dwellings.

³Dwellings in which the number of persons exceeds the number of rooms.

14.4 Type of dwelling, by province and by census metropolitan area, 1971

Province and census metropolitan area	Total dwellings ¹	Single detached	Multiple-unit types ²	Single detached %	Multiple-unit types ² %
PROVINCE					
Newfoundland	110,440	85,970	23,765	77.8	21.5
Prince Edward Island	27,880	21,010	6,235	75.4	22.4
Nova Scotia	207,505	148,050	54,265	71.3	26.2
New Brunswick	157,635	110,630	43,535	70.2	27.6
Quebec	1,604,785	641,665	956,560	40.0	59.6
Ontario	2,225,490	1,365,580	851,200	61.4	38.2
Manitoba	288,370	208,455	76,170	72.3	26.4
Saskatchewan	267,565	218,050	45,405	81.5	17.0
Alberta	464,615	329,600	124,205	70.9	26.7
British Columbia	667,545	454,335	193,975	68.1	29.1
Yukon Territory and Northwest Territories	12,675	8,430	3,325	66.5	26.2
Canada	6,034,505	3,591,770	2,378,635	59.5	39.4
METROPOLITAN AREA					
Calgary, Alta.	121,155	73,055	47,140	60.3	38.9
Chicoutimi—Jonquière, Que.	29,655	13,620	15,830	45.9	53.4
Edmonton, Alta.	144,730	90,205	53,520	62.3	37.0
Halifax, NS	59,690	28,570	29,925	47.9	50.1
Hamilton, Ont.	146,280	92,920	53,275	63.5	36.4
Kitchener, Ont.	66,555	38,675	27,840	58.1	41.8
London, Ont.	87,140	53,030	33,775	60.9	38.8
Montreal, Que.	805,775	190,780	614,010	23.7	76.2
Ottawa—Hull, Ont., Que.	170,025	78,815	90,510	46.4	53.2

14.4 Type of dwelling, by province and by census metropolitan area, 1971 (concluded)

Province and census metropolitan area	Total dwellings ¹	Single detached	Multiple-unit types ²	Single detached %	Multiple-unit types ² %
METROPOLITAN AREA (concluded)					
Quebec, Que.	127,375	45,085	81,925	35.4	64.3
Regina, Sask.	42,525	29,050	13,245	68.3	31.1
Saint John, NB	28,690	12,880	15,335	44.9	53.5
St. Catharines—Niagara, Ont.	88,940	65,350	23,405	73.5	26.3
St. John's, Nfld.	29,740	15,965	13,700	53.7	46.1
Saskatoon, Sask.	38,590	25,520	12,760	66.1	33.1
Sudbury, Ont.	39,390	23,725	15,360	60.2	39.0
Thunder Bay, Ont.	32,195	24,525	7,595	76.2	23.6
Toronto, Ont.	773,985	354,965	418,755	45.9	54.1
Vancouver, BC	345,870	216,455	127,205	62.6	36.8
Victoria, BC	66,365	42,875	22,855	64.6	34.4
Windsor, Ont.	74,170	52,910	21,135	71.3	28.5
Winnipeg, Man.	166,480	105,570	60,570	63.4	36.4

¹Includes mobile homes.²Includes double and row houses, apartments, flats, duplexes, etc.**14.5 Owned and rented dwellings, by province and type of locality, censuses of 1961 and 1971**

Province or territory and type of locality	1961			1971		
	Owned	Rented	Owned/rented ratio	Owned	Rented	Owned/rented ratio
PROVINCE						
Newfoundland	76,691	11,249	87.2/12.8	88,335	22,110	80.0/20.0
Prince Edward Island	18,958	4,984	79.2/20.8	20,725	7,155	74.3/25.7
Nova Scotia	131,405	43,935	74.9/25.1	147,705	59,800	71.2/28.8
New Brunswick	94,022	38,692	70.8/29.1	109,450	48,185	69.4/30.6
Quebec	583,981	607,387	49.0/51.0	761,340	843,450	47.4/52.6
Ontario	1,157,229	483,521	70.5/29.5	1,400,340	825,145	62.9/37.1
Manitoba	176,156	63,598	73.5/26.5	190,585	97,790	66.1/33.9
Saskatchewan	188,226	57,198	76.7/23.3	194,535	73,035	72.7/27.3
Alberta	248,537	101,272	71.0/29.0	296,705	167,910	63.9/36.1
British Columbia	326,090	133,442	71.0/29.0	422,785	244,765	63.3/36.7
Yukon Territory and Northwest Territories	4,292	3,628	54.2/45.8	4,425	8,240	35.0/65.0
Canada	3,005,587	1,548,906	66.0/34.0	3,636,925	2,397,585	60.3/39.7
TYPE OF LOCALITY						
Urban	1,946,559	1,333,909	59.3/40.7	2,572,885	2,164,535	54.3/45.7
500,000 and over	1,178,136 ¹	910,934 ¹	56.4/43.6 ¹	956,765	1,118,550	46.1/53.9
100,000-499,999				556,375	428,770	56.5/43.5
30,000- 99,999				304,450	230,365	56.9/43.1
5,000- 29,999				248,740	248,740	64.4/35.6
Under 5,000	244,865	106,452	69.7/30.3	305,610	138,105	68.9/31.1
Rural	1,059,028	214,997	83.1/16.9	1,064,045	233,050	82.0/18.0
Non-farm	641,038	183,434	77.8/22.2	758,830	210,830	78.3/21.7
Farm	417,990	31,563	93.0/ 7.0	305,210	22,215	93.2/ 6.8

¹1961 figures available for urban group "100,000 and over" only.**14.6 Average number of rooms per dwelling and percentage of crowded dwellings¹, by province, censuses of 1961 and 1971**

Province	Average number of rooms per dwelling		Percentage of crowded dwellings ¹	
	1961	1971	1961	1971
Newfoundland	5.9	5.8	29.9	23.6
Prince Edward Island	6.4	6.1	17.0	12.8
Nova Scotia	5.8	5.7	18.2	12.4
New Brunswick	5.9	5.7	21.0	15.2
Quebec	5.3	5.2	21.8	12.4
Ontario	5.5	5.6	11.8	6.8
Manitoba	4.9	5.2	16.8	9.2
Saskatchewan	4.9	5.3	18.7	9.8
Alberta	4.9	5.4	17.5	8.3
British Columbia	4.9	5.2	12.1	6.8
Yukon Territory and Northwest Territories	3.4	4.3	45.4	30.7
Canada	5.3	5.4	16.5	9.4

¹Dwellings in which the number of persons exceeds the number of rooms.

14.7 Period of construction and length of occupancy, by province and by census metropolitan area, 1971 (percentage)

Province and census metropolitan area	Period of construction				Length of occupancy					
	Before 1946	1946-60	1961-71 ¹	Total	Less than 1 year	1-2 years	3-5 years	6-10 years	More than 10 years	Total
PROVINCE										
Newfoundland	35.0	36.4	28.6	100.0	11.1	11.7	13.5	16.1	47.6	100.0
Prince Edward Island	62.2	18.7	19.0	100.0	11.7	11.4	12.3	14.8	49.7	100.0
Nova Scotia	53.2	25.6	21.1	100.0	14.4	13.1	12.7	14.1	45.7	100.0
New Brunswick	50.4	27.9	21.7	100.0	14.1	13.0	13.3	14.6	45.0	100.0
Quebec	37.5	33.9	28.6	100.0	17.2	17.5	15.5	17.9	32.0	100.0
Ontario	39.8	32.2	28.0	100.0	17.5	17.0	16.2	16.3	32.9	100.0
Manitoba	42.6	32.2	25.3	100.0	17.8	14.6	14.6	16.2	36.8	100.0
Saskatchewan	42.3	32.6	25.1	100.0	14.7	12.6	14.2	18.1	40.4	100.0
Alberta	26.8	38.7	34.5	100.0	20.6	16.7	16.5	16.8	29.4	100.0
British Columbia	29.6	35.1	35.3	100.0	22.5	18.3	17.6	15.7	25.9	100.0
Yukon Territory and Northwest Territories	9.5	32.2	58.4	100.0	34.9	26.4	17.9	11.5	9.2	100.0
Canada	38.0	33.2	28.8	100.0	17.8	16.6	15.8	16.6	33.2	100.0
METROPOLITAN AREA										
Calgary, Alta.	19.7	40.6	39.7	100.0	25.7	18.1	17.3	15.0	23.9	100.0
Chicoutimi—Jonquière, Que.	36.8	40.4	22.8	100.0	15.8	15.5	14.0	15.4	39.2	100.0
Edmonton, Alta.	18.0	41.2	40.9	100.0	23.6	18.6	17.3	16.6	23.8	100.0
Halifax, NS	34.8	32.8	32.4	100.0	22.7	17.5	16.1	15.4	28.2	100.0
Hamilton, Ont.	37.5	34.1	28.4	100.0	16.7	17.0	16.9	16.6	32.8	100.0
Kitchener, Ont.	32.9	29.9	37.2	100.0	21.7	18.4	15.4	15.2	29.2	100.0
London, Ont.	39.4	29.7	30.9	100.0	21.2	17.2	16.5	14.6	30.5	100.0
Montreal, Que.	31.1	36.4	32.4	100.0	19.5	19.9	16.5	19.0	25.1	100.0
Ottawa—Hull, Ont., Que.	28.7	33.9	37.4	100.0	21.5	19.1	17.4	17.2	24.9	100.0
Quebec, Que.	35.2	29.6	35.2	100.0	18.9	17.3	15.9	17.4	30.5	100.0
Regina, Sask.	30.5	35.9	33.7	100.0	21.5	16.9	15.7	18.6	27.3	100.0
Saint John, NB	53.7	23.9	22.4	100.0	16.1	16.0	16.7	17.4	33.8	100.0
St. Catharines—Niagara, Ont.	41.8	35.8	22.4	100.0	14.9	14.3	14.8	15.9	40.1	100.0
St. John's, Nfld.	36.2	32.2	31.6	100.0	14.6	14.6	15.6	17.7	37.5	100.0
Saskatoon, Sask.	27.6	35.0	37.3	100.0	24.3	17.5	15.7	16.7	25.8	100.0
Sudbury, Ont.	30.6	41.4	28.1	100.0	19.6	18.1	15.7	15.3	31.2	100.0
Thunder Bay, Ont.	44.4	35.3	20.2	100.0	14.6	14.1	15.2	16.9	39.2	100.0
Toronto, Ont.	30.7	35.3	34.0	100.0	19.1	19.4	17.5	17.2	26.8	100.0
Vancouver, BC	30.8	35.5	33.7	100.0	22.1	17.9	17.3	15.6	27.1	100.0
Victoria, BC	36.2	32.9	30.9	100.0	22.0	18.1	17.3	16.6	26.0	100.0
Windsor, Ont.	49.1	31.6	19.3	100.0	16.9	14.0	13.5	15.1	40.5	100.0
Winnipeg, Man.	41.5	33.4	25.1	100.0	20.2	16.1	15.1	15.5	33.1	100.0

¹Includes the first five months only of 1971.

14.8 Median value and proportion with mortgages for single detached owner-occupied non-farm dwellings and average cash rent for tenant-occupied non-farm dwellings, by province and by census metropolitan area, 1971

Province and census metropolitan area	Non-farm dwellings			Tenant-occupied	
	Single detached owner-occupied				
	No.	Median value \$	Dwellings with mortgage %	No.	Average monthly cash rent \$
PROVINCE					
Newfoundland	77,080	7,828	17.4	21,980	93
Prince Edward Island	14,325	9,454	36.0	6,975	86
Nova Scotia	124,705	10,829	32.9	59,410	104
New Brunswick	91,420	9,153	33.5	47,890	87
Quebec	499,640	14,667	58.4	836,935	92
Ontario	1,117,965	23,768	56.4	815,190	129
Manitoba	148,015	14,904	47.6	95,585	104
Saskatchewan	129,870	11,467	40.0	68,620	89
Alberta	219,110	19,933	59.1	162,460	116
British Columbia	366,085	23,502	56.8	242,620	120
Yukon Territory and Northwest Territories	3,510	8,639	36.0	8,245	95
Canada	2,791,730	19,020	52.8	2,365,905	110
METROPOLITAN AREA					
Calgary, Alta.	62,045	22,461	74.7	52,135	127
Chicoutimi—Jonquière, Que.	11,410	15,489	69.9	13,505	83
Edmonton, Alta.	71,555	23,665	69.9	64,205	124
Halifax, NS	24,275	22,820	64.2	29,915	129
Hamilton, Ont.	82,280	25,172	62.7	52,775	123
Kitchener, Ont.	35,215	23,968	63.9	26,415	120
London, Ont.	45,370	20,916	63.1	34,725	121
Montreal, Que.	165,350	18,603	75.5	519,165	99
Ottawa—Hull, Ont., Que.	69,075	25,758	72.3	83,880	135
Quebec, Que.	39,080	19,422	73.9	73,365	99
Regina, Sask.	24,070	16,443	62.4	16,865	102
Saint John, NB	11,060	15,528	54.8	14,155	83
St. Catharines—Niagara, Ont.	57,170	19,966	52.6	24,890	106
St. John's, Nfld.	13,810	19,945	45.5	9,995	104

14.8 Median value and proportion with mortgages for single detached owner-occupied non-farm dwellings and average cash rent for tenant-occupied non-farm dwellings, by province and by census metropolitan area, 1971 (concluded)

Province and census metropolitan area	Non-farm dwellings				
	Single detached owner-occupied			Tenant-occupied	
	No.	Median value \$	Dwellings with mortgage %	No.	Average monthly cash rent \$
METROPOLITAN AREA (concluded)					
Saskatoon, Sask.	21,065	17,230	62.0	15,635	101
Sudbury, Ont.	18,990	22,306	61.2	16,485	121
Thunder Bay, Ont.	21,620	16,212	50.4	8,565	98
Toronto, Ont.	316,790	32,408	66.1	347,420	151
Vancouver, BC	186,025	26,702	61.9	141,715	130
Victoria, BC	37,250	25,007	58.2	25,545	119
Windsor, Ont.	46,550	22,327	51.3	21,790	123
Winnipeg, Man.	91,115	17,780	58.3	67,905	108

14.9 Percentage distribution of principal fuels used for home heating, by province and by census metropolitan area, 1971

Province and census metropolitan area	Total	Oil or other liquid fuel	Gas	Coal or coke	Other
PROVINCE					
Newfoundland	100.0	82.3	0.1	2.6	15.0
Prince Edward Island	100.0	87.2	0.5	1.5	10.8
Nova Scotia	100.0	83.6	0.8	5.5	10.1
New Brunswick	100.0	84.5	0.8	0.7	14.0
Quebec	100.0	79.3	8.0	0.1	12.6
Ontario	100.0	54.0	37.1	0.8	8.1
Manitoba	100.0	32.3	54.4	2.1	11.2
Saskatchewan	100.0	32.7	60.4	1.6	5.2
Alberta	100.0	9.4	83.6	3.2	3.8
British Columbia	100.0	47.0	40.8	0.5	11.6
Yukon Territory and Northwest Territories	100.0	79.5	3.7	0.1	16.6
Canada	100.0	57.1	32.1	1.1	9.8
METROPOLITAN AREA					
Calgary, Alta.	100.0	2.3	94.9	--	2.8
Chicoutimi—Jonquiére, Que.	100.0	87.5	0.7	0.1	11.7
Edmonton, Alta.	100.0	2.7	94.0	0.4	3.0
Halifax, NS	100.0	93.9	0.5	0.6	4.9
Hamilton, Ont.	100.0	53.5	40.9	1.5	4.0
Kitchener, Ont.	100.0	55.1	36.1	0.6	8.2
London, Ont.	100.0	30.7	63.0	0.5	5.8
Montreal, Que.	100.0	76.8	14.1	0.2	8.9
Ottawa—Hull, Ont., Que.	100.0	78.7	13.5	0.1	7.7
Quebec, Que.	100.0	86.5	0.3	0.1	13.1
Regina, Sask.	100.0	8.6	88.9	0.1	2.3
Saint John, NB	100.0	95.5	1.2	0.4	2.9
St. Catharines—Niagara, Ont.	100.0	31.6	64.8	0.2	3.3
St. John's, Nfld.	100.0	88.1	0.1	1.6	10.3
Saskatoon, Sask.	100.0	3.4	94.3	--	2.2
Sudbury, Ont.	100.0	68.5	22.7	0.2	8.6
Thunder Bay, Ont.	100.0	34.4	60.3	0.3	5.0
Toronto, Ont.	100.0	53.8	39.7	0.9	5.6
Vancouver, BC	100.0	38.1	55.6	0.4	5.8
Victoria, BC	100.0	83.4	2.4	0.7	13.5
Windsor, Ont.	100.0	12.8	77.8	0.6	8.8
Winnipeg, Man.	100.0	17.6	76.2	0.4	5.8

14.10 Percentage of dwellings with specified facilities, by province and type of locality, Census 1971

Province or territory and type of locality	Percentage of dwellings with		
	Running water	Bath or shower (exclusive use)	Flush toilet (exclusive use)
Newfoundland	83.7	66.3	73.6
Rural	70.4	45.3	54.0
Urban	93.0	81.0	87.4
Prince Edward Island	86.1	75.0	78.0
Rural	78.1	63.6	65.9
Urban	98.3	92.3	96.2
Nova Scotia	92.2	80.3	84.7
Rural	83.4	65.6	70.3
Urban	98.7	91.2	95.4

14.10 Percentage of dwellings with specified facilities, by province and type of locality, Census 1971 (concluded)

Province or territory and type of locality	Percentage of dwellings with		
	Running water	Bath or shower (exclusive use)	Flush toilet (exclusive use)
New Brunswick	92.1	80.5	86.2
Rural	83.4	65.1	72.5
Urban	98.0	90.9	95.4
Quebec	98.9	92.2	97.4
Rural	95.3	77.1	92.3
Urban	99.6	95.1	98.3
Ontario	98.0	94.5	95.7
Rural	89.9	82.4	84.3
Urban	99.5	96.8	98.0
Manitoba	90.2	85.4	85.1
Rural	66.9	59.9	55.3
Urban	98.9	95.0	96.3
Saskatchewan	83.8	78.7	77.5
Rural	66.5	60.3	55.9
Urban	97.6	93.4	94.6
Alberta	92.6	88.5	88.9
Rural	72.6	66.2	64.7
Urban	99.0	95.6	96.5
British Columbia	98.0	95.0	95.6
Rural	92.5	88.1	88.5
Urban	99.6	96.9	97.6
Yukon Territory and Northwest Territories			
Rural	66.0	64.1	62.3
Urban	35.1	33.5	30.0
Canada	87.5	85.2	84.6
Rural	96.1	90.8	93.1
Urban	84.4	73.5	77.3
	99.3	95.6	97.5

14.11 Annual estimates of household facilities and equipment, 1974

Item	Estimated households 1974 (April) '000	Percentage of households	
		1974 (April)	1973 (April)
Total households	6,493	100.0	100.0
Principal heating facilities			
Furnaces	5,245	80.8	80.7
Oil	3,042	46.9	47.4
Gas	2,146	33.1	32.4
Wood or coal	47	0.7	0.9
Other equipment	1,248	19.2	19.3
Oil	430	6.6	8.0
Gas	159	2.4	2.6
Wood or coal	86	1.3	1.6
Electricity	561	8.6	7.0
Cooking fuel			
Electricity	5,431	83.6	81.7
Piped gas	646	10.0	10.6
Bottled gas	119	1.8	2.1
Wood or coal	116	1.8	2.2
Kerosene, oil or other	164	2.5	3.0
Fuel used for piped hot water supply			
Electricity	3,195	49.2	48.1
Gas	2,118	32.6	32.8
Oil	872	13.4	13.1
Coal or wood	29	0.5	0.5
No hot water supply	277	4.3	5.5
Refrigerators and home freezers			
Electric refrigerators	6,421	98.9	98.6
Home freezers	2,584	39.8	37.4
Washing machines			
Automatic	3,178	49.0	44.9
Other electric	1,856	28.6	32.3
Clothes dryers	3,138	48.3	47.7
Telephones	6,223	95.8	95.0
Radios			
All types, except car	6,374	98.2	97.7
FM receivers	4,652	71.7	67.2

14.11 Annual estimates of household facilities and equipment, 1974 (concluded)

Item	Estimated households 1974 (April) '000	Percentage of households	
		1974 (April)	1973 (April)
TV sets			
All types	6,257	96.4	96.0
Black and white	4,756	73.3	79.2
Colour	2,892	44.5	33.2
Record players	4,834	74.5	72.3
Automobiles	5,065	78.0	77.9
One automobile	3,663	56.4	57.3
Two or more automobiles	1,402	21.6	20.6
Miscellaneous			
Window-type air conditioners	495	7.6	6.7 ¹
Central-unit air conditioners	166	2.6	1 ¹
Automatic dishwashers	836	12.9	10.7
Adult-sized bicycles	1,971	30.4	29.1
Snowmobiles	604	9.3	9.2
Floor polishers	3,137	48.3	53.4 ²
Snow-blowers	419	6.5	4.6 ²
Lawn-mowers (power)	3,195	49.2	48.5 ²
Boats	879	13.5	12.4 ²
Overnight camping equipment	1,389	21.4	17.7 ²
Vacation homes	473	7.3	7.2
Outboard motors	668	10.3	11.0 ²

¹Data not collected in 1973.²1972 figures (data not collected in 1973).³1971 figures (data not collected in 1972 and 1973).**14.12 Value of new and repair construction work performed, 1970-74¹**

Year	New \$'000,000	Repair \$'000,000	Total \$'000,000	Total construction as percentage of gross national expenditure
1970	11,320	2,461	13,781	16.1
1971	13,276	2,589	15,865	17.0
1972	14,469	2,820	17,289	16.7
1973	16,960	3,178	20,138	17.0
1974	19,590	3,563	23,153	..

¹Actual expenditures 1970-72; preliminary actual 1973; intentions 1974.**14.13 Value of construction work performed, by contractors and others, 1970-74¹ (million dollars)**

Item	1970	1971	1972	1973	1974
Contract construction	10,827	12,703	13,744	16,058	18,457
New	9,356	11,108	11,984	14,099	16,247
Repair	1,471	1,595	1,760	1,959	2,210
Other construction ²	2,954	3,162	3,545	4,080	4,696
New	1,964	2,168	2,485	2,861	3,343
Repair	990	994	1,060	1,219	1,353
Total, construction	13,781	15,865	17,289	20,138	23,153
New	11,320	13,276	14,469	16,960	19,590
Repair	2,461	2,589	2,820	3,178	3,563

¹Actual expenditures 1970-72; preliminary actual 1973; intentions 1974.²Work done by the labour forces of utilities, government departments and other employers not primarily engaged in the construction industry.

14.14 Value of construction work performed, by type of structure, 1972-74¹ (thousand dollars)

Type of structure	1972			1973			1974		
	New	Repair	Total	New	Repair	Total	New	Repair	Total
BUILDING CONSTRUCTION									
Residential	4,820,074	1,050,575	5,870,649	5,938,841	1,194,189	7,133,030	6,503,800	1,359,818	7,863,618
Industrial	706,308	220,433	926,741	841,634	234,212	1,075,846	1,021,685	253,574	1,275,259
Factories, plants, workshops, food canneries	582,086	180,340	762,426	696,444	188,663	885,107	848,861	204,001	1,052,862
Mine and mill buildings	17,662	1,762	19,424	133,066	31,111	164,177	151,421	32,739	184,160
Railway stations, offices, roadway buildings	19,744	12,324	32,068	7,979	9,009	16,988	14,398	10,417	24,815
Railway shops, engine houses, water and fuel stations	7,386	9,807	17,193	4,145	5,429	9,574	7,005	6,417	13,422
Commercial	1,466,621	239,525	1,706,146	1,826,050	263,019	2,089,069	2,313,150	284,993	2,598,143
Warehouses, storehouses, refrigerated storage, etc.	92,143	21,614	113,757	132,652	25,996	158,648	157,404	28,027	185,431
Grain elevators	6,130	5,258	11,388	9,432	5,542	14,974	10,080	4,859	14,939
Hotels, clubs, restaurants, cafeterias, tourist cabins	145,909	23,474	169,383	185,837	22,787	208,624	275,514	24,265	299,779
Office buildings	619,468	94,121	713,589	742,504	108,796	851,300	941,534	118,016	1,059,550
Stores, retail and wholesale	372,317	421,397	793,714	471,985	50,814	522,799	511,849	54,562	566,411
Garages and service stations	91,381	31,580	122,961	115,298	34,875	150,173	140,527	40,404	180,931
Theatres, arenas, amusement and recreational buildings	135,762	13,236	148,998	167,026	12,951	179,977	279,752	13,586	293,338
Laundries and dry-cleaning establishments	3,511	1,162	4,673	1,316	1,258	2,574	1,490	1,274	2,764
Institutional	1,094,414	154,878	1,249,292	988,053	163,413	1,151,466	1,060,556	179,540	1,240,096
Schools and other educational buildings	724,132	88,386	812,518	614,955	80,919	695,874	623,490	88,607	712,097
Churches and other religious buildings	14,155	8,084	22,239	11,887	7,700	19,587	13,118	6,541	19,659
Hospitals, sanatoria, clinics, first-aid stations, etc.	235,756	36,932	272,688	241,181	44,970	286,151	277,891	54,925	332,816
Other	120,371	21,476	141,847	120,090	29,824	149,914	146,057	29,467	175,524
Other buildings	436,700	137,999	574,699	535,246	144,840	680,086	663,126	170,602	833,728
Farm buildings (excl. dwellings)	193,149	75,723	268,872	227,738	88,854	316,592	273,554	108,099	381,653
Broadcasting, radio and television, relay and booster stations, telephone exchanges	48,110	12,833	60,943	67,449	10,908	78,357	76,643	12,471	89,114
Aeroplane hangars	9,352	5,898	15,250	5,261	5,638	10,899	6,564	6,108	12,672
Passenger terminals, bus, boat or air	42,304	5,517	47,821	42,739	2,401	45,140	56,826	2,594	59,420
Asturies, barracks, drill halls, etc.	8,472	7,807	16,279	11,008	8,505	19,513	12,088	8,980	21,068
Bunkhouses, dormitories, camp cookeries, bush depots and camps	10,350	4,294	14,644	21,640	4,821	26,461	17,686	4,767	22,453
Laboratories	32,955	3,613	36,568	39,984	4,288	44,272	51,169	5,692	56,861
Other	92,008	22,314	114,322	119,427	19,425	138,852	168,596	21,891	190,487
Total, building construction	8,524,117	1,803,410	10,327,527	10,129,824	1,999,673	12,129,497	11,562,317	2,248,527	13,810,844
ENGINEERING CONSTRUCTION									
Marine	120,783	24,820	145,603	121,143	28,718	149,861	151,413	30,459	181,872
Docks, wharves, piers, breakwaters	56,638	12,342	68,980	66,187	13,070	79,257	82,613	13,865	96,478
Retaining walls, embankments, riprapping	5,228	5,536	10,764	4,965	655	5,620	5,548	810	6,358
Canals and waterways	33,692	3,861	37,553	20,158	4,150	24,308	26,512	4,784	31,296
Dredging and pile driving	14,529	4,849	19,378	16,368	5,707	22,075	20,761	6,340	27,101
Dyke construction	2,328	386	2,714	6,705	839	7,544	9,957	4,332	10,389
Logging booms	530	390	920	1,154	576	1,730	1,420	601	2,021
Other	5,838	2,456	8,294	5,606	3,721	9,327	4,602	3,627	8,229
Road, highway and aerodrome	1,409,800	260,967	1,670,767	1,550,416	321,678	1,872,094	1,744,903	365,335	2,110,238
Highway, road and street construction, (incl. grading, scraping, oiling, filling)	1,351,565	250,565	1,601,882	1,475,808	309,193	1,785,001	1,659,646	351,548	2,011,194
Parking lots	20,061	3,280	23,341	14,849	4,465	19,314	14,695	4,896	19,591
Sidewalks, paths	20,008	4,388	24,396	23,227	4,808	28,035	26,783	5,194	31,977
Aerodromes, landing fields, runways, tarmac	26,514	2,734	29,248	36,532	3,212	39,744	43,779	3,697	47,476

14.14 Value of construction work performed, by type of structure, 1972-74* (thousand dollars) (concluded)

Type of structure	1972			1973			1974		
	New	Repair	Total	New	Repair	Total	New	Repair	Total
Waterworks and sewerage systems									
Tile drains, drainage ditches, storm sewers	624,584	89,721	714,305	739,278	92,234	831,512	900,015	102,620	1,002,635
Water mains, hydrants and services	124,441	20,098	144,539	159,972	20,361	180,333	161,940	22,807	184,747
Sewerage systems and services	138,303	34,221	172,524	163,889	35,616	199,505	197,408	39,161	236,569
Pumping stations, water	322,837	25,549	348,386	374,737	27,036	401,773	480,082	30,234	510,316
Water storage tanks	33,534	8,328	41,862	31,820	7,384	39,204	43,302	8,248	51,550
Dams and irrigation	5,469	1,525	6,994	8,860	1,837	10,697	17,283	2,170	19,453
Dams and reservoirs	63,845	14,084	77,929	70,602	16,435	87,037	91,054	19,507	110,561
Irrigation and land reclamation projects	32,765	2,832	35,597	35,819	3,119	38,938	50,576	3,539	54,115
Electric power	31,080	11,252	42,332	34,783	13,316	48,099	40,478	15,968	56,446
Electric power generating plants, including water conveying and controlling structures	1,122,679	112,557	1,235,236	1,464,914	144,371	1,609,285	1,679,262	155,529	1,834,791
Power transmission stations	642,826	33,483	676,309	932,094	39,036	971,130	1,071,777	43,675	1,115,452
Street lighting	7,685	1,059	8,744	6,406	943	7,349	8,126	1,001	9,127
Railway, telephone and telegraph	456,928	74,121	531,049	510,288	100,845	611,133	580,836	107,419	688,255
Railway tracks and roadbeds	15,240	3,894	19,134	16,126	3,547	19,673	18,523	3,434	21,957
Signals and interlockers	446,492	219,616	666,108	537,074	257,900	795,064	638,424	301,298	939,722
Telegraph and telephone lines, underground and marine cables	152,412	134,007	286,419	188,860	169,321	358,181	234,692	200,602	435,294
Gas and oil facilities	10,511	19,495	30,006	11,260	13,800	25,060	15,507	16,185	31,692
Gas mains and services	283,569	66,114	349,683	336,954	74,869	411,823	388,225	84,511	472,736
Pumping stations, oil	1,209,014	176,668	1,385,682	1,349,699	181,468	1,531,167	1,633,581	199,396	1,832,977
Pumping stations, gas	88,570	11,937	100,507	89,950	12,466	102,416	94,352	13,469	107,821
Oil storage tanks	19,263	2,130	21,393	13,551	4,548	18,099	9,703	4,835	14,538
Gas storage tanks	15,306	1,848	17,154	13,999	2,154	16,153	23,807	1,785	25,592
Gas pipelines	20,235	5,858	26,093	26,537	3,721	30,258	20,127	5,052	25,179
Oil and gas wells	3,750	202	3,952	3,319	219	3,538	2,716	266	2,982
Oil refinery — processing units	46,467	5,753	52,220	75,627	7,720	83,347	33,446	9,247	42,693
Natural gas processing plants	138,138	1,475	139,613	103,002	1,258	104,260	69,036	2,208	71,244
Other engineering	611,577	77,008	688,585	783,305	64,655	847,960	991,673	68,257	1,059,930
Bridges, trestles, culverts, overpasses, viaducts	156,437	52,070	208,507	160,842	53,770	214,612	284,411	59,989	344,400
Tunnels and subways	89,271	18,387	107,658	70,567	30,957	101,524	104,310	34,288	138,598
Incinerators	948,131	117,633	1,065,764	997,731	135,034	1,132,765	1,188,716	140,990	1,329,706
Park systems, landscaping, sodding, etc.	157,835	28,131	185,966	146,382	32,490	178,872	164,297	32,549	196,846
Swimming pools, tennis courts, outdoor recreation facilities	54,750	2,583	57,333	61,504	1,263	62,767	90,872	3,756	94,628
Mine shafts and other below surface workings	3,301	941	4,242	8,658	1,563	10,221	9,172	1,137	10,309
Fences, snowsheds, signs, guard rails	37,750	12,558	50,308	53,009	16,287	69,296	61,266	18,761	80,027
Other engineering	13,240	1,193	14,433	18,259	3,725	21,984	24,551	1,668	26,219
Total, engineering construction	188,894	3,379	192,273	210,048	3,524	213,572	248,261	3,943	252,204
Total, all construction	452,899	51,398	504,297	464,788	56,663	521,451	571,018	22,863	593,881
5,945,328	1,016,066	6,961,394	6,830,857	1,177,928	8,008,785	13,115,134	8,027,368	3,563,661	16,682,732
14,469,445	2,819,476	17,288,921	16,960,681	3,177,601	20,138,282	19,589,685	3,563,661	23,153,346	23,153,346

*Actual expenditures 1972; preliminary actual 1973; intentions 1974.

14.15 Labour content, cost of materials and value of work performed in construction, by province and by employer, 1972-74¹

Province and employer	Year	Labour content		Cost of materials used \$'000	Value of work performed \$'000
		No.	Value \$'000		
PROVINCE					
Newfoundland	1972	16,995	152,719	160,001	458,966
	1973	15,408	161,110	172,371	471,413
	1974	15,592	180,465	191,994	513,765
Prince Edward Island	1972	2,489	20,398	30,479	66,925
	1973	3,801	33,171	49,898	108,479
	1974	3,657	34,569	56,432	118,602
Nova Scotia	1972	19,951	173,677	199,354	488,311
	1973	22,098	219,115	253,224	623,612
	1974	23,196	251,407	287,666	709,252
New Brunswick	1972	15,913	131,887	158,766	373,021
	1973	19,916	175,941	209,371	494,163
	1974	22,760	222,489	258,712	620,666
Quebec	1972	130,961	1,354,464	1,433,698	3,745,055
	1973	138,677	1,582,445	1,674,794	4,357,966
	1974	146,947	1,845,358	1,941,505	5,063,621
Ontario	1972	198,933	2,259,346	2,498,628	6,275,813
	1973	214,471	2,590,287	2,901,886	7,237,522
	1974	223,447	2,968,422	3,316,715	8,280,324
Manitoba	1972	26,401	258,594	314,979	754,441
	1973	28,009	301,486	373,992	888,493
	1974	28,012	331,461	408,137	969,918
Saskatchewan	1972	21,888	205,537	249,549	593,380
	1973	24,343	242,578	297,265	705,834
	1974	25,221	272,914	321,768	779,319
Alberta	1972	63,526	684,958	787,505	1,979,301
	1973	67,179	785,631	888,680	2,272,740
	1974	71,602	923,224	1,019,930	2,655,444
British Columbia, the Yukon Territory and Northwest Territories	1972	71,627	876,875	1,034,758	2,553,708
	1973	83,720	1,022,596	1,210,973	2,978,060
	1974	87,570	1,178,779	1,395,907	3,442,435
Canada	1972	568,684	6,118,455	6,867,717	17,288,921
	1973	617,622	7,114,360	8,032,454	20,138,282
	1974	648,004	8,209,088	9,198,766	23,153,346
EMPLOYER					
Contractors	1972	440,161	4,823,702	5,500,417	13,744,128
	1973	478,297	5,610,130	6,448,742	16,057,939
	1974	501,202	6,469,199	7,380,109	18,457,458
Utilities	1972	49,514	556,709	655,664	1,694,441
	1973	54,996	663,578	770,217	1,978,741
	1974	56,537	751,383	862,885	2,228,267
Governments	1972	45,600	415,647	317,105	982,825
	1973	48,011	470,163	357,832	1,098,456
	1974	51,101	549,308	414,632	1,277,158
Miscellaneous	1972	33,409	322,397	394,531	867,527
	1973	36,318	370,489	455,663	1,003,146
	1974	39,164	439,198	541,140	1,190,463

¹Actual expenditures 1972; preliminary actual 1973; intentions 1974.

14.16 Value of building permits issued, by province, 1973 and 1974 with totals for 1970-74 (thousand dollars)

Province or territory and year		Residential construction			Non-residential construction			Total
		New	Repair	Total	Indus- trial	Commer- cial	Institutional and government	
Newfoundland	1973	27,983	2,469	30,452	343	24,898	32,519	88,212
	1974	33,189	3,573	36,762	8,899	9,632	13,278	68,571
Prince Edward Island	1973	4,423	356	4,779	496	5,313	3,623	14,211
	1974	15,974	1,880	17,854	3,526	4,485	14,605	40,470
Nova Scotia	1973	104,717	6,308	111,025	9,367	46,389	14,652	181,433
	1974	141,254	9,086	150,340	29,346	61,131	61,014	301,831
New Brunswick	1973	64,029	4,365	68,394	20,378	38,754	17,734	145,260
	1974	72,152	5,435	77,587	16,587	32,454	41,002	167,630
Quebec	1973	773,352	41,850	815,202	207,959	380,301	295,454	1,698,916
	1974	754,841	49,816	804,657	396,154	531,797	288,059	2,020,667
Ontario	1973	2,267,123	98,901	2,366,024	428,004	849,323	377,689	4,021,040
	1974	1,869,685	132,518	2,002,203	533,896	905,229	385,367	3,826,695
Manitoba	1973	125,707	4,473	130,180	13,857	52,003	27,755	223,795
	1974	137,019	5,851	142,870	19,104	71,840	39,671	273,485
Saskatchewan	1973	94,337	3,418	97,755	11,894	47,042	27,288	183,979
	1974	122,761	4,201	126,962	21,451	53,321	36,548	238,282

14.16 Value of building permits issued, by province, 1973 and 1974 with totals for 1970-74 (thousand dollars) (concluded)

Province or territory and year	Residential construction			Non-residential construction			Total
	New	Repair	Total	Industrial	Commercial	Institutional and government	
Alberta	1973	388,868	10,900	399,768	76,856	229,114	762,927
	1974	437,080	12,935	450,015	198,434	323,335	1,069,927
British Columbia	1973	694,723	37,388	732,111	84,058	292,807	1,226,539
	1974	711,747	50,883	762,630	87,782	297,926	1,259,833
Yukon Territory	1973	9	—	9	12	56	77
	1974	—	—	—	—	—	—
Northwest Territories	1973	6,949	434	7,383	530	4,340	12,549
	1974	3,332	498	3,830	719	1,515	12,684
Total	1970	2,235,938	75,625	2,311,563	497,682	807,374	4,700,159
	1971	3,121,347	81,716	3,203,063	470,924	1,069,785	5,711,581
	1972	3,480,725	157,686	3,638,411	520,479	1,411,599	6,463,608
	1973	4,552,220	210,862	4,763,082	853,754	1,970,340	8,558,938
	1974	4,299,034	276,676	4,575,710	1,315,898	2,292,665	9,280,075

14.17 Estimated value of proposed construction as indicated by building permits issued in 50 municipalities, 1973 and 1974 (thousand dollars)

Province and municipality	1973	1974	Province and municipality	1973	1974
NEWFOUNDLAND			Oshawa	35,852	40,826
St. John's	69,455	40,172	Ottawa	243,652	222,787
PRINCE EDWARD ISLAND			Scarborough (borough)	203,801	392,936
Charlottetown	8,531	3,065	Thunder Bay	56,405	49,904
NOVA SCOTIA			Toronto	394,391	392,936
Halifax	47,070	54,666	Windsor	59,311	85,884
NEW BRUNSWICK			York (borough)	55,992	12,819
Fredericton	22,237	22,625	York North (borough)	282,035	283,304
Moncton	19,733	29,638	MANITOBA		
Saint John	42,529	44,649	Fort Garry		
QUEBEC			St. Boniface	171,142	211,200
La Salle	16,601	13,284	St. James		
Montreal	235,320	313,019	Winnipeg		
Quebec	42,994	62,197	SASKATCHEWAN		
Ste. Foy	27,192	36,673	Moose Jaw	10,144	19,672
St. Laurent	53,099	54,382	Prince Albert	12,877	10,929
Sept Îles	22,234	20,305	Regina	67,471	90,873
Sherbrooke	21,005	29,093	Saskatoon	40,981	50,933
Trois-Rivières	25,430	22,205	ALBERTA		
ONTARIO			Calgary	240,484	273,373
Brampton	20,711	107,846 ¹	Edmonton	254,684	240,044
Burlington	79,214	65,414	Jasper Place	27,567	42,552
Etobicoke (borough)	248,234	131,098	Lethbridge	16,596	127,225
Hamilton	83,306	123,637	Medicine Hat	14,848	22,541
Kitchener	58,056	56,647	Red Deer		
London	108,040	99,580	BRITISH COLUMBIA		
London Township	2,510	2,548	Burnaby District	69,840	92,742
Mississauga	286,143	170,430	Richmond Township	73,301	82,646
Nepean Township	31,736	41,054	Surrey District	60,762	61,980
			Vancouver	170,724	139,813
			Victoria	42,977	75,620

¹Includes townships of Chinguacousy and Toronto Gore and part of Mississauga.²Metropolitan Corporation of Greater Winnipeg.³Jasper Place included with Edmonton following annexation.**14.18 Estimated value of building permits issued in metropolitan areas, 1973 and 1974 (thousand dollars)**

Metropolitan area	1973	1974	Metropolitan area	1973	1974
Calgary	240,484	273,373	Saint John	42,785	47,082
Chicoutimi-Jonquière	42,376	56,556	St. Catharines-Niagara	133,890	120,110
Edmonton	254,684	316,024	St. John's ¹	69,455	40,172
Halifax	106,403	138,183	Saskatoon	40,981	50,933
Hamilton	204,776	228,300	Sudbury	35,473	32,261
Kitchener	127,959	119,185	Thunder Bay	56,405	52,334
London	128,728	120,193	Toronto	1,924,634	1,618,794
Montreal	886,643	986,751	Vancouver	638,445	582,082
Ottawa-Hull	465,918	465,095	Victoria	119,913	162,111
Quebec	154,020	176,478	Windsor	81,622	116,591
Regina	67,471	90,873	Winnipeg	171,142	211,200

¹Although this is a metropolitan area, only St. John's proper is included in the building permits survey.

14.19 Capital expenditures¹ on construction and on machinery and equipment, in current and constant (1961) dollars, 1966-75

Year	Capital expenditures (\$'000,000)		Machinery and equipment		Total		Capital expenditures as percentage of gross national expenditure	
	Construction							
	Current dollars	Constant 1961 dollars	Current dollars	Constant 1961 dollars	Current dollars	Constant 1961 dollars	Current dollars	Constant 1961 dollars
1966	9,281	7,707	5,807	4,931	15,088	12,638	24.8	23.7
1967	9,474	7,579	5,874	5,019	15,348	12,598	23.5	22.9
1968	9,909	7,862	5,546	4,743	15,455	12,605	21.7	21.6
1969	10,824	8,158	6,103	5,081	16,927	13,239	21.6	21.6
1970	11,319	8,188	6,479	5,153	17,798	13,341	21.2	21.2
1971	13,274	9,086	6,910	5,336	20,184	14,422	21.7	21.4
1972	14,470	9,288	7,748	5,881	22,218	15,169	21.5	21.2
1973	16,959	10,073	9,172	6,679	26,131	16,752	22.0	21.9
1974	20,498	10,610	11,953	7,797	32,451	18,407	23.7	23.8
1975	23,079	—	13,802	—	36,881	—	—	—

¹Actual expenditures 1966-72; preliminary actual 1973 and 1974; intentions 1975.

14.20 Summary of capital and repair expenditures, by economic sector, 1973-75¹ (million dollars)

Type of enterprise and year		Capital			Repair			Capital and repair		
		Con-struction	Ma-chinery and equip-ment	Total	Con-struction	Ma-chinery and equip-ment	Total	Con-struction	Ma-chinery and equip-ment	Total
Agriculture and fishing	1973	346	1,247	1,594	135	323	458	481	1,570	2,051
	1974	460	1,516	1,976	184	388	572	644	1,904	2,548
	1975	542	1,755	2,298	212	455	668	755	2,211	2,965
Forestry	1973	76	103	179	27	95	123	104	198	302
	1974	105	144	249	32	101	133	137	245	382
	1975	125	130	255	32	114	146	157	243	401
Mining, quarrying and oil wells	1973	1,276	404	1,681	193	489	682	1,469	894	2,362
	1974	1,529	494	2,023	183	575	758	1,712	1,069	2,781
	1975	1,763	543	2,305	211	629	840	1,973	1,172	3,145
Construction industry	1973	57	347	404	14	306	320	71	653	724
	1974	69	416	485	16	367	384	85	784	869
	1975	77	469	546	19	413	432	96	882	977
Manufacturing	1973	986	2,682	3,668	276	1,643	1,919	1,262	4,325	5,587
	1974	1,362	3,600	4,962	338	1,808	2,146	1,700	5,407	7,108
	1975	1,749	4,318	6,067	367	1,968	2,335	2,116	6,286	8,402
Utilities	1973	2,673	2,484	5,157	498	1,119	1,617	3,171	3,603	6,774
	1974	3,138	2,978	6,116	637	1,235	1,872	3,775	4,213	7,988
	1975	4,102	3,561	7,663	741	1,439	2,180	4,843	5,000	9,843
Trade (wholesale and retail)	1973	287	515	801	77	89	166	364	604	968
	1974	359	550	909	81	96	177	440	646	1,086
	1975	359	536	895	85	95	180	443	631	1,075
Finance, insurance and real estate	1973	1,094	145	1,238	66	23	89	1,160	167	1,327
	1974	1,326	204	1,530	81	28	110	1,408	232	1,640
	1975	1,442	193	1,636	86	32	117	1,528	225	1,753
Commercial services	1973	305	1,100	1,405	30	134	164	335	1,234	1,570
	1974	437	1,265	1,702	30	143	172	467	1,407	1,874
	1975	508	1,395	1,903	30	168	198	538	1,563	2,101
Institutional services	1973	914	228	1,142	135	40	175	1,048	268	1,316
	1974	1,072	268	1,339	139	40	179	1,211	308	1,518
	1975	1,270	289	1,559	153	45	198	1,423	334	1,757
Government departments	1973	2,962	410	3,372	578	130	708	3,540	540	4,080
	1974	3,667	518	4,185	639	149	788	4,305	667	4,973
	1975	4,428	613	5,041	686	161	847	5,114	774	5,888
Housing	1973	5,978	—	5,978	1,188	—	1,188	7,165	—	7,165
	1974	6,975	—	6,975	1,355	—	1,355	8,330	—	8,330
	1975	6,715	—	6,715	1,547	—	1,547	8,262	—	8,262
Total	1973	16,953	9,666	26,618	3,217	4,391	7,608	20,170	14,056	34,226
	1974	20,498	11,953	32,451	3,715	4,929	8,644	24,213	16,882	41,095
	1975	23,080	13,802	36,881	4,168	5,519	9,688	27,248	19,321	46,569

¹Actual expenditures 1973; preliminary actual 1974; intentions 1975.

14.21 Capital and repair expenditures for certain economic sectors, 1973-75¹ (million dollars)

Type of enterprise and year	Capital			Repair			Capital and repair			
	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total	
MANUFACTURING										
Food and beverages	1973	113	247	360	27	140	167	140	387	527
	1974	149	297	446	28	142	170	177	439	615
	1975	112	292	405	28	142	170	140	434	574
Tobacco products	1973	1	11	12	3	8	11	4	19	23
	1974	9	18	27	3	9	11	12	27	38
	1975	3	12	15	3	11	14	6	23	29
Rubber	1973	28	97	125	4	51	55	32	148	180
	1974	26	116	142	3	46	49	29	162	191
	1975	22	103	125	3	52	56	25	155	181
Leather	1973	3	7	10	1	6	7	4	13	17
	1974	4	8	12	1	8	9	5	16	21
	1975	4	10	13	1	8	9	5	17	23
Textile	1973	26	87	113	6	41	47	32	129	160
	1974	37	128	165	8	47	55	45	174	219
	1975	37	119	155	7	48	55	43	167	210
Knitting mills	1973	3	18	22	1	4	5	4	23	27
	1974	1	17	19	1	4	5	2	21	23
	1975	1	12	13	1	4	5	2	16	18
Clothing	1973	10	15	25	2	5	7	11	20	31
	1974	9	15	24	1	5	6	10	20	31
	1975	5	16	20	1	5	7	6	21	27
Wood	1973	76	200	277	17	124	141	93	324	417
	1974	85	205	290	17	129	145	102	334	436
	1975	57	177	235	15	129	144	73	306	379
Furniture and fixtures	1973	12	21	33	3	7	10	14	28	42
	1974	17	28	44	3	9	12	20	36	56
	1975	12	24	36	3	9	12	15	33	48
Paper and allied industries	1973	89	313	402	21	290	310	110	603	713
	1974	104	468	572	30	348	378	134	816	950
	1975	142	588	730	34	377	411	176	965	1,140
Printing, publishing and allied industries	1973	15	62	77	4	17	21	19	79	99
	1974	15	63	78	5	18	23	20	81	101
	1975	17	67	84	5	19	24	22	85	107
Primary metals	1973	76	329	404	39	420	459	115	749	863
	1974	132	509	641	47	488	535	179	997	1,175
	1975	278	760	1,038	54	553	607	332	1,313	1,645
Metal fabricating	1973	43	120	164	14	74	87	57	194	251
	1974	53	144	198	14	78	92	67	222	290
	1975	55	152	207	14	85	100	69	237	306
Machinery	1973	30	60	90	8	26	34	38	86	124
	1974	40	79	118	10	26	36	50	105	155
	1975	42	91	133	11	28	39	53	119	172
Transportation equipment	1973	48	143	191	17	109	127	65	252	317
	1974	96	219	315	17	105	122	113	324	437
	1975	65	202	267	18	109	127	84	311	395
Electrical products	1973	32	95	127	9	39	48	41	134	175
	1974	31	107	137	10	45	55	41	152	192
	1975	36	129	165	12	46	59	48	175	224
Non-metallic mineral products	1973	38	151	189	8	112	120	45	263	308
	1974	35	147	181	12	116	127	46	262	309
	1975	40	173	213	11	130	141	52	302	354
Petroleum and coal products	1973	230	89	319	71	17	88	301	106	407
	1974	315	92	408	93	19	113	409	111	520
	1975	363	81	444	106	23	129	469	103	572
Chemical and chemical products ^a	1973	101	193	293	20	135	155	121	327	448
	1974	184	413	597	31	153	183	215	566	781
	1975	449	709	1,157	34	174	207	482	882	1,364
Miscellaneous	1973	13	30	42	4	18	21	16	47	64
	1974	20	36	56	5	16	21	25	52	77
	1975	10	33	43	4	16	21	15	50	64
Capital items charged to operating expenses	1973	—	393	393	—	—	—	—	393	393
	1974	—	492	492	—	—	—	—	492	492
	1975	—	572	572	—	—	—	—	572	572
Total, manufacturing	1973	986	2,682	3,668	276	1,643	1,919	1,262	4,325	5,587
	1974	1,362	3,600	4,962	338	1,808	2,146	1,700	5,407	7,108
	1975	1,749	4,318	6,067	367	1,968	2,335	2,116	6,286	8,402
MINING										
Metal mines ^a	1973	357	241	598	48	300	348	405	541	946
	1974	379	158	537	44	363	407	423	521	944
	1975	383	225	608	51	404	455	434	629	1,062
Iron mines	1973	170	137	307	14	118	132	185	255	439
	1974	147	43	190	11	162	173	158	205	363
	1975	119	77	196	12	169	181	131	246	377

14.21 Capital and repair expenditures for certain economic sectors, 1973-75¹ (million dollars) (continued)

Type of enterprise and year	Capital			Repair			Capital and repair			
	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total	
MINING (concluded)										
Other metal mines	1973	187	105	292	34	182	215	221	286	507
	1974	232	115	347	33	201	234	265	316	581
	1975	263	149	412	39	234	273	302	383	685
Petroleum and gas ⁴	1973	852	83	935	138	54	192	990	138	1,127
	1974	1,040	194	1,234	129	65	194	1,169	259	1,428
	1975	1,263	143	1,406	145	68	213	1,408	211	1,619
Other mining ⁵	1973	68	80	147	7	135	142	74	215	289
	1974	110	142	252	10	147	157	120	289	409
	1975	117	175	291	15	158	173	132	332	464
Total, mining	1973	1,276	404	1,681	193	489	682	1,469	894	2,362
	1974	1,529	494	2,023	183	575	758	1,712	1,069	2,781
	1975	1,763	543	2,305	211	629	840	1,973	1,172	3,145
UTILITIES										
Transportation										
Air transport	1973	16	353	369	4	148	152	20	501	521
	1974	20	356	375	23	171	194	43	527	570
	1975	43	221	264	24	191	215	67	412	478
Railway transport	1973	228	132	360	217	327	545	446	459	905
	1974	305	168	473	287	373	660	592	540	1,132
	1975	433	281	714	352	481	833	785	762	1,547
Water transport and services	1973	47	83	130	11	35	46	58	118	176
	1974	65	69	134	14	42	56	79	111	190
	1975	49	64	113	17	39	56	66	103	168
Motor transport	1973	18	150	168	6	130	137	24	280	304
	1974	27	169	197	6	126	131	33	295	328
	1975	33	146	178	6	134	140	39	279	319
Urban transit systems	1973	54	38	92	13	38	51	67	76	143
	1974	77	55	133	15	43	58	92	99	191
	1975	167	88	254	16	50	66	183	138	321
Pipelines	1973	339	46	385	19	6	25	358	52	410
	1974	238	25	263	19	7	27	258	32	290
	1975	230	41	271	18	6	24	248	47	295
Capital items charged to operating expenses	1973	—	19	19	—	—	—	—	19	19
	1974	—	21	21	—	—	—	—	21	21
	1975	—	23	23	—	—	—	—	23	23
Total, transportation	1973	703	820	1,523	270	685	955	973	1,504	2,477
	1974	733	863	1,595	365	762	1,126	1,097	1,624	2,721
	1975	954	862	1,817	433	900	1,333	1,387	1,763	3,150
Communication										
Broadcasting ⁶	1973	39	54	94	5	6	12	45	61	105
	1974	52	76	128	5	7	12	57	83	140
	1975	50	93	143	6	8	14	56	101	157
Telephone and telegraph	1973	371	700	1,071	71	309	380	442	1,009	1,451
	1974	459	970	1,429	86	359	445	545	1,329	1,875
	1975	555	1,117	1,672	97	411	509	652	1,528	2,180
Capital items charged to operating expenses	1973	—	14	14	—	—	—	—	14	14
	1974	—	18	18	—	—	—	—	18	18
	1975	—	21	21	—	—	—	—	21	21
Total, communication	1973	410	768	1,179	77	315	392	487	1,083	1,570
	1974	511	1,065	1,576	91	366	457	602	1,431	2,033
	1975	605	1,231	1,836	103	419	522	708	1,650	2,358
Miscellaneous utilities										
Grain elevators	1973	11	10	20	4	6	10	15	16	30
	1974	10	9	19	6	6	11	16	15	30
	1975	15	26	42	5	6	11	20	32	52
Electric power	1973	1,417	827	2,244	130	100	229	1,546	927	2,473
	1974	1,728	975	2,703	157	88	245	1,886	1,062	2,948
	1975	2,336	1,369	3,705	179	98	277	2,515	1,467	3,982
Gas distribution	1973	108	38	146	14	7	22	123	45	168
	1974	135	42	177	14	7	21	149	49	198
	1975	163	43	206	16	8	24	178	51	229
Other utilities ⁷	1973	24	8	32	4	7	10	27	15	42
	1974	21	11	32	5	7	12	26	17	44
	1975	29	9	38	6	7	13	35	16	51
Capital items charged to operating expenses	1973	—	13	13	—	—	—	—	13	13
	1974	—	15	15	—	—	—	—	15	15
	1975	—	20	20	—	—	—	—	20	20

14.21 Capital and repair expenditures for certain economic sectors, 1973-75¹ (million dollars) (concluded)

Type of enterprise and year	Capital			Repair			Capital and repair		
	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total
Total, miscellaneous utilities	1973 1,560	896	2,456	151	120	271	1,711	1,016	2,727
	1974 1,894	1,051	2,945	182	107	289	2,076	1,158	3,234
	1975 2,543	1,467	4,010	205	120	325	2,748	1,587	4,335
Total, utilities	1973 2,673	2,484	5,157	498	1,119	1,617	3,171	3,603	6,774
	1974 3,138	2,978	6,116	637	1,235	1,872	3,775	4,213	7,988
	1975 4,102	3,561	7,663	741	1,439	2,180	4,843	5,000	9,843

¹Actual expenditures 1973; preliminary actual 1974; intentions 1975.²Includes expenditures for heavy water plants.³Capital construction expenditures include on-property exploration and development but exclude outside or general exploration.⁴Includes expenditures on facilities related to petroleum and gas wells and extraction of petroleum from shales or sands, natural gas processing plants and contract drilling for petroleum and gas.⁵Includes coal mines, asbestos, gypsum, salt, potash and miscellaneous non-metal mines and quarrying.⁶Includes community antenna television and satellite communication systems.⁷Includes toll highways and bridges, warehousing, water systems of private and provincial enterprises and other utilities.**14.22 Capital and repair expenditures, by province, 1973-75¹ (million dollars)**

Province or territory and year	Capital			Repair			Capital and repair		
	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total
Newfoundland	1973 441	193	634	57	117	174	498	310	808
	1974 529	168	697	66	153	219	595	321	915
	1975 532	199	731	74	162	236	606	361	967
Prince Edward Island	1973 98	26	124	17	9	27	115	35	151
	1974 96	34	130	14	11	25	110	45	155
	1975 91	32	123	18	12	30	109	44	153
Nova Scotia	1973 518	307	825	103	116	219	621	423	1,044
	1974 584	322	905	110	128	238	694	449	1,143
	1975 617	323	941	128	140	268	746	463	1,209
New Brunswick	1973 427	209	636	90	94	184	517	303	820
	1974 620	327	947	108	111	219	728	437	1,166
	1975 714	370	1,084	121	126	247	835	496	1,331
Quebec	1973 3,713	2,113	5,827	659	951	1,611	4,373	3,065	7,437
	1974 4,754	2,620	7,374	765	1,082	1,847	5,519	3,702	9,221
	1975 5,492	2,900	8,391	848	1,172	2,019	6,339	4,071	10,410
Ontario	1973 5,981	3,734	9,715	1,154	1,686	2,840	7,135	5,420	12,555
	1974 7,010	4,570	11,580	1,392	1,807	3,199	8,402	6,377	14,780
	1975 7,822	5,568	13,390	1,547	2,060	3,607	9,369	7,627	16,997
Manitoba	1973 736	407	1,143	153	173	326	889	580	1,469
	1974 809	597	1,406	176	216	391	985	813	1,798
	1975 823	711	1,534	199	244	443	1,021	955	1,977
Saskatchewan	1973 524	455	979	176	200	376	700	655	1,355
	1974 706	564	1,270	213	225	438	918	789	1,708
	1975 839	710	1,549	237	257	494	1,076	967	2,042
Alberta	1973 1,943	989	2,931	391	345	736	2,334	1,334	3,668
	1974 2,346	1,343	3,689	404	411	814	2,749	1,754	4,503
	1975 2,805	1,507	4,312	460	474	934	3,265	1,981	5,246
British Columbia	1973 2,276	1,156	3,433	403	671	1,074	2,679	1,828	4,506
	1974 2,666	1,355	4,021	449	755	1,204	3,115	2,109	5,224
	1975 2,998	1,430	4,428	516	838	1,354	3,513	2,268	5,782
Yukon Territory and Northwest Territories	1973 296	76	372	14	28	41	309	104	413
	1974 379	53	433	18	33	51	397	86	483
	1975 348	52	400	21	36	57	369	88	457
Canada	1973 16,953	9,666	26,618	3,217	4,391	7,608	20,170	14,056	34,226
	1974 20,498	11,953	32,451	3,715	4,929	8,644	24,213	16,882	41,095
	1975 23,080	13,802	36,881	4,168	5,519	9,688	27,248	19,321	46,569

¹Actual expenditures 1973; preliminary actual 1974; intentions 1975.**Sources**

14.1 - 14.3 Central Mortgage and Housing Corporation.

14.4 - 14.9 Housing and Families Section, Census Branch, Statistics Canada.

14.10 Construction Division, Industry Statistics Branch, Statistics Canada.

14.11 Consumer and Income Expenditure Division, Household Statistics Branch, Statistics Canada.

14.12 - 14.22 Construction Division, Industry Statistics Branch, Statistics Canada.

Chapter 15

Transportation

15.1 Government promotion and regulation

The federal government plays a twofold role in developing transportation services. One is promotional, to ensure the growth and development of the kind of transportation appropriate to the times; the other is regulatory and includes economic regulation of rates and services and also the application of technical regulations to meet safety requirements. The building of canals from the time of Confederation to the construction of the St. Lawrence Seaway, underwriting railway development and branch-line extension, establishing Air Canada, investing in airports and aeronautical installations and building the Trans-Canada Highway fall within the first category as each was to promote adequate transportation facilities.

The Ministry of Transport and the various Crown agencies reporting to Parliament through the Minister of Transport have jurisdiction over canals, harbours, shipping, civil aviation and interprovincial and international railways. Jurisdiction over for-hire interprovincial or international highway transport also rests with the federal government but these powers are at present exercised by the provincial highway transport boards as provided for in the federal Motor Vehicle Transport Act of 1954 (RSC 1970, c.M-14).

Railway regulation was developed in a period when railways enjoyed a virtual monopoly of transport in the country. Measures to protect the public against excessive charges, unjust discrimination and other objectionable monopoly practices, together with measures to ensure safe operations, have over the years subjected railways to the most comprehensive regulation of any Canadian industry. However, the rapid growth of road, air and pipeline services has ended the monopoly of a large part of the total traffic available and forced the railways into a highly competitive situation.

The National Transportation Act (RSC 1970, c.N-17) defines a national transportation policy for Canada with a view to achieving an economic and efficient transportation system making the best use of all available modes of transportation at the lowest total cost. The Act established the Canadian Transport Commission (CTC) to carry out the functions formerly performed by the Board of Transport Commissioners for Canada, the Air Transport Board and the Canadian Maritime Commission. In addition, it created a framework within which the CTC might regulate interprovincial and international motor transport as well as the transportation by pipeline of commodities other than oil and gas.

In general, the purpose of the Act is to develop the transportation industry and at the same time protect the public against excessive or discriminatory charges by competition between forms of transport rather than by regulation and control. The railways are relieved of some of the more onerous and outdated restrictions on their freedom to meet competition. On the other hand, a shipper who has no practical alternative to rail shipment can apply to the Commission to have a maximum rate fixed for transporting his goods. The Act also provides a procedure to allow railways, subject to explicit safeguards in the public interest, to abandon lines and withdraw passenger services where they are no longer needed.

The Canadian Transport Commission has established several committees, five of which — Railway Transport, Air Transport, Water Transport, Commodity Pipeline Transport and Telecommunications — exercise the Commission's powers in their respective industries. The Commission is a court of record; its decisions are binding within its jurisdiction and may be reviewed only by appeal to the Supreme Court of Canada on a question of law or jurisdiction with leave of that Court, or by the Governor in Council. However, a party to a licence application under the Aeronautics Act or the Transport Act may appeal to the Minister of Transport. The Commission has jurisdiction under several acts, including the Railway Act, the Aeronautics Act and the Transport Act, over transportation by railway, by air and by inland water, and over communication by telephone and telegraph.

Under the Railway Act the Commission has jurisdiction over construction, maintenance and operation of railways that are subject to the legislative authority of the Parliament of Canada, including matters of engineering, location of lines, crossings and crossing protection, safety of train operation, operating rules, investigation of accidents, accommodation for traffic and facilities for service, abandonment of operation and uniformity of railway accounting. The

Commission also has certain jurisdiction over telephones and telegraphs, the tolls for which were re-defined by an amendment to the Railway Act in 1970 to include private wire, Telex and broadband exchange services operated by telecommunication carriers under federal jurisdiction. The jurisdiction includes regulation of the telephone tolls of Bell Canada because of the interprovincial nature of the company's operations and tolls for the use of international bridges and tunnels. Except for certain statutory rates, and subject to certain powers of the Commission to deal with rates that it finds to be contrary to public interest, the railways are free to charge rates as they wish. However, rates must be compensatory, as defined in the Railway Act, and the Commission may prescribe tolls for captive shippers if such tolls take undue advantage of a monopoly situation favouring the railways.

The Commission is responsible for the economic regulation of commercial air services in Canada and is also required to advise the Minister of Transport on matters relating to civil aviation. The regulatory function relates to Canadian air services within Canada and abroad and to foreign air services operating in and out of Canada. It involves licensing all such services and regulating the licensees. The Commission issues regulations dealing with the classification of air-carriers and commercial air services, accounts, records and reports, traffic tolls and tariffs, and various other matters. All regulations, rules and orders issued by the former Air Transport Board continue in force until repealed or amended by the Commission.

The CTC takes an active part in the work of the International Civil Aviation Organization and, when appropriate, undertakes bilateral negotiations for the exchange of traffic rights. In 1973 Air Canada and CP Air were Canada's designated international scheduled carriers.

Pursuant to the provisions of the Transport Act, the Commission processes applications for licences for ships to transport goods and/or passengers, for hire or reward, between ports or places in Canada on the Great Lakes and on the Mackenzie and Yukon rivers. Provisions of the Act do not apply to the transport of goods in bulk on waters other than the Mackenzie River. Before granting a licence, the Commission must determine that the proposed service is and will be required by the present and future public convenience and necessity and, in so doing, may take into consideration any objection provided for in the statute. Tariffs of tolls must be filed and the Commission has regulatory powers over tolls for such transport.

The Commission, under the terms of the Pilotage Act, is empowered to investigate objections to proposed tariffs of pilotage charges, including the holding of public hearings, and to make recommendations thereon to the appropriate Pilotage Authority. Under the Shipping Conferences Exemption Act, ocean carriers which are members of a shipping conference are required to file with the Commission copies of their agreements, arrangements, contracts, patronage contracts and tariffs. These documents are made available for inspection by any person during regular business hours of the Commission.

The Commission is also authorized, under the provisions of the St. Lawrence Seaway Authority Act, to consider any complaints filed with respect to unjust discrimination in existing tariffs and to make a finding thereon to be reported to the said Authority.

In Canada the coasting laws restrict the operation of ships from one point to another to Canadian or British ships, depending upon the area concerned. In order to enable a ship of any foreign country to engage in such operations, application has to be made to the Minister of National Revenue to obtain a waiver of the coasting laws. In such circumstances the Commission is called upon to advise the Minister of the availability or otherwise of a suitable Canadian ship.

The CTC also administers subsidies paid by the federal government for maintaining certain coastal and inland waters shipping services. Table 15.1 shows the net amount of these subsidies paid in the year ended March 31, 1974.

15.2 Rail transport

Canadian railway transport is dominated by two transcontinental systems, supplemented by a number of regional railways. The government owned Canadian National Railway System is the country's largest public utility and operates the longest track mileage in Canada. It serves all 10 provinces as well as the Great Slave Lake area of the Northwest Territories. In addition it operates a highway transport service, a fleet of coastal steamships, a chain of large hotels and resorts, a telecommunications service, and, as an autonomous subsidiary (Air Canada), a scheduled Canadian and international air service. Canadian Pacific Limited is a joint-stock corporation operating a railway service in eight provinces. Similar to and competitive with the

Canadian National Railway System, it is a multi-transport organization with a fleet of inland and ocean-going vessels as well as coastal vessels, a fleet of trucks, a chain of year-round and resort hotels, a telecommunications service, and a domestic and foreign airline service. Through a major subsidiary, Canadian Pacific Investments Limited, important interests are held in mining (i.e. Cominco Ltd.), oil and gas, forests products, real estate and related operations, hotel and food services, and steel production and associated services. The British Columbia Railway operates over a 1,000-mile route from North Vancouver to Fort Nelson in northeastern British Columbia. The Northern Alberta Railway, jointly owned by CP and CN, serves the area north of Edmonton with a 900-mile system. Northern Ontario is served by the provincially owned Ontario Northland Railways with a 600-mile system stretching from North Bay to Moosonee, and by the privately owned Algoma Central Railway operating over 300 miles of line between Sault Ste Marie and Hearst.

In addition, a US-Canada passenger service, inaugurated by the National Railroad Passenger Corporation (AMTRAK), is operated between Seattle, Wash. and Vancouver, BC and between Montreal, Que. and Washington, DC via New York City, Springfield, Mass. and resort areas in New Hampshire and Vermont.

The largest contributors to Canada's total 1973 railway revenue were Canadian National (52.7%) and Canadian Pacific (36.4%). The Quebec North Shore and Labrador Railway, built to transport ore and concentrates from the iron mines of the Schefferville and Wabush areas of Quebec and Labrador to water transportation facilities on the St. Lawrence River, accounted for 2.4% of the revenues. Other railways contributing 1.0% or more of the total revenue figure were the British Columbia Railway (2.2%) and the Ontario Northland Railways (1.0%).

In recent years the railways have faced strong competition from highway and air transport for the movement of people and goods. Still indispensable for carrying bulk commodities, railways are necessary to the development of natural resources located in isolated areas of Canada. Only pipelines have competed with railways in this respect by providing an economical means of transporting the products of oil and gas fields for long distances overland.

The rapid growth of containerization in recent years has made the integration of the services of railway, highway, shipping and other modes of transport of growing importance. However, because Canada's two major railways are already involved in several forms of transportation, they are in an excellent position to meet the challenge of this and other trends appearing in the transportation industry. Canadian railways have evolved over the past century from a position of virtual monopoly in the movement of goods and people by rail, through a highly competitive stage to the present system of co-operation and co-ordination with other modes of transport. This permits each type of transport to perform the particular function it can do best, thus establishing the most effective and economical system of transportation services possible.

15.2.1 Government aid

In the 19th century governments promoted the building of railways to provide transportation and communications across Canada. Private developers received assistance in the form of land grants, cash payments, loans or purchase of shares. Since the formation of the Canadian National Railway System, its debenture issues, except those for rolling-stock, have been guaranteed by the federal government. Provincial governments had guaranteed the bonds of some lines that were later incorporated in the CNR System. As these mature or are called, they are paid off by the CNR in large measure through funds raised by issuing new bonds guaranteed by the federal government. At December 31, 1974, railway bonds guaranteed by the Government of Canada amounted to \$596 million.

The National Transportation Act provides for normal railway subsidy payments of \$110 million for 1967, declining by \$14 million a year, the last payment being \$12 million for 1974; and allows railways to file claims and receive specific payments for losses incurred on branch lines and passenger-train services operated in the public interest. Total payments of \$159.6 million for 1973 represented specific payments to the two major railways, exceeding and replacing their shares of the normal subsidy. Claims for 1974 must be filed by June 30, 1975.

Truckers receive federal assistance through freight rate subsidies similar to the subsidies to railways provided under the Maritime Freight Rate Act. Since 1969 the Atlantic Region Freight Assistance Act has allowed subsidies on goods moved from Nova Scotia, Prince Edward Island, New Brunswick, the island of Newfoundland, and Quebec south of the St.

Lawrence River and east of Highway 23 to points in Canada outside that territory. In October 1970 assistance was authorized for goods moved by highway transport within that area as well. In April 1974 selective assistance for specified commodities moving by railway or highway transport to points in Canada outside the territories was authorized at a level of 50% of that portion of the freight rate earned within the territory.

15.2.2 Rail transport statistics

Track mileage and rolling-stock. Table 15.2 illustrates the historical development of first main track mileage from 17,657 miles in 1900 to 44,232 miles in 1973. The same Table presents statistics on main and other types of track mileage by province and territory and that operated by Canadian carriers in the US for the years 1969-73.

Table 15.3 gives freight and passenger equipment in operation in 1972 and 1973. The freight carrying capabilities of the railways is steadily being improved with larger, more efficient cars and locomotives and increased speed of movement facilitated by modernized handling and terminal services. Each year hundreds of units, particularly freight cars, are converted and modified to make them suitable for specific types of traffic or are replaced by special-purpose equipment designed for distinctive hauling jobs. Because of the fuel consumption efficiency of the railways and higher fuel costs, there is a trend to greater freight movement by rail. Container and piggyback traffic has also increased in the past few years.

Revenue freight. Total tonnage of freight carried by all common carrier railways (including national loadings and receipts from US connections) in 1972 and 1973 is shown in Table 15.4 under the commodity structure adopted in 1970 based on Statistics Canada's Standard Commodity Classification. Despite some loss of continuity with previous data, the new commodity breakdown permits improved comparisons with other series (water transport, imports, exports, etc.), which are also based on this Classification.

Capital structure and finance. Tables 15.5 - 15.8 give information on capital investment in road and equipment, and on operating revenues, expenses and net income of all common carrier railways operating in Canada, except that of the Cartier Railway which is not available. In transportation statistics a distinction is made between expenditures and expenses. In the following data, the term "expenses" refers to the expenses of furnishing rail transportation service and of operations incident thereto, including maintenance and depreciation of the plant used in such service.

The capital structure of the Canadian National Railway System is presented in Table 15.6 and financial details of operations in both Canada and the United States in Table 15.7. Revenues and expenses include those of express and commercial communications and highway transport (rail) operations. Tax accruals and rents are charged to operating expenses.

Total operating revenues and expenses of common carrier railways operating in Canada (except the Cartier Railway) continued to rise, both reaching peak levels in 1973; increases over 1972 amounted to 9.4% and 10.3%, respectively (as calculated from Table 15.8). However, net operating revenues showed a decrease of 8.2% to \$90.0 million.

15.3 Road transport

The federal government establishes motor vehicle safety standards, while registration of motor vehicles and regulation of motor vehicle traffic lie with the legislative jurisdiction of the provincial and territorial governments. An outline of legislation, as well as summaries of motor vehicle and traffic regulations common to all provinces and territories are presented in the following Sections.

15.3.1 Federal safety regulations

The general objective of the Motor Vehicle Safety Act (RSC 1970, c.26, 1st Supp.) is to establish mandatory safety standards for new motor vehicles to protect people from injuries or death and from the hazardous effects of exhaust and noise emissions. The legislation applies to all new motor vehicles and components manufactured in or imported into Canada, and requires manufacturers to issue notices of safety defects in a prescribed manner. The safety of vehicles in use continues to be a provincial responsibility discharged under existing provincial legislation.

The safety regulations currently include 35 standards relating to the design and performance of passenger cars, trucks, buses, motorcycles, competition motorcycles,

minibikes and trailers; six standards limiting motor vehicle exhaust, evaporative and noise emissions; and 11 standards applying to snowmobiles. These standards are reviewed regularly and additions or revisions incorporated to keep pace with engineering or technical advances. The regulations require all Canadian motor vehicle manufacturers or distributors to apply the national safety mark, accompanied by a label certifying compliance with all applicable federal motor vehicle safety standards, to every classified vehicle produced after January 1, 1971. Vehicles imported for commercial or individual use must comply with the Act and Regulations.

15.3.2 Motor vehicle and traffic regulations

Operators licences. The operator of a motor vehicle must be over a specified age, usually 16 years (17 in Newfoundland and generally 16 in Alberta and New Brunswick but 18 for certain classes of motor vehicle), and must carry a licence, obtainable in most provinces only after prescribed qualification tests. In New Brunswick the holder of an out-of-province licence must be 18. A licence is renewable annually in Saskatchewan and the Northwest Territories and annually at the end of the licensee's birth month in Manitoba; in Alberta it is renewable every five years but annually where a medical report is required; in British Columbia it is renewable every five years expiring on the licensee's birth date and classified according to the operations by the licensee; in Quebec operators and chauffeurs permits are renewable every two years on the holder's birthday; in New Brunswick a licence is renewable every two years and expires at the end of the licensee's birth month; in Newfoundland, Ontario and the Yukon Territory a licence is issued on a three-year basis and expires on the licensee's birth date; and in Nova Scotia a licence is issued on a three-year basis and expires at the end of the licensee's birth month. Prince Edward Island is phasing into a three-year cycle.

Special licences are required for chauffeurs in all provinces except Newfoundland, British Columbia, New Brunswick and the Yukon Territory. In British Columbia, New Brunswick and the Yukon Territory, although no special chauffeur's licence is issued, all drivers' licences are classified according to demonstrated skills at the time of licensing. There are six classes of licence, one for motorcycles and five for other vehicles. Special tests are given to taxi drivers (in British Columbia and the Yukon Territory only), bus drivers and drivers of single vehicles over 24,000 lb. GVW and tractor-trailer combinations. In the Northwest Territories persons under 18 but over 16 may obtain a chauffeur's licence at the discretion of the Registrar, on receipt of a letter of approval from the RCMP and a letter from the employer verifying that the licence is necessary for employment. In some provinces a motorcycle operator is required to pass a special examination and have his driver's licence endorsed authorizing him to operate this class of vehicle or, if he has no driver's licence, he may be issued a licence to operate only a motorcycle. In Alberta a person under 16 but over 14 years of age is permitted to operate a motorcycle with a piston displacement of not more than 100 cc. In Quebec all snowmobile operators must hold valid permits issued for that purpose. Operators or chauffeurs permits issued under the Highway Code are considered valid for snowmobiles. Special restrictions apply to minors; 10 is the minimum age for obtaining a permit and operating conditions and locations are controlled.

Motor vehicle regulations. Motor vehicles and trailers are usually registered annually with the payment of specified fees. Most motor vehicles carry a registration plate on the front and one on the rear; trailers carry one on the rear. In Alberta passenger cars, vehicles licensed for Drive-ur-self service and vehicles operated by motor vehicle dealers for demonstration or resale all display two plates. All other cars or trucks have one rear licence plate.

In some provinces registration plates stay with the vehicle when it is sold, but in Quebec, Manitoba, Saskatchewan, Alberta and British Columbia the owner retains them. In the Northwest Territories the registration expires when a vehicle changes hands. The owner notifies the Registrar, returns the number plates and the new owner applies to register the transferred vehicle in his name. In Nova Scotia vehicles change hands by due process of law and title must be secured before plates and permits are issued. A change of ownership must be recorded with the registration authority.

Exemption from registration is granted for a specified period, usually at least 90 days, although the maximum in Quebec is three months for non-residents. In Nova Scotia, a non-resident full-time student residing temporarily in the province may receive, without fee, a driver's licence, plates and permit in exchange for the same valid out-of-province documents;

the latter are returned to his home province, state or territory. In Ontario the exemption period is six consecutive months for non-residents from other provinces and three for those with vehicles registered outside Canada. The regulations in Manitoba allow residents to use registration plates from other jurisdictions for 90 days; visitors are exempt from registration if the vehicle is not used for business; and an out-of-province student is exempt if his vehicle is properly registered in his home jurisdiction and he obtains a student sticker for the vehicle's windshield. In Saskatchewan an out-of-province student is exempt for the school year provided the vehicle is properly registered in his home jurisdiction and, if necessary, he can prove financial responsibility. The Alberta regulations permit non-residents to operate vehicles currently registered in their home province or in the United States for six months; the period is extended to a school year for out-of-province students whose vehicles carry non-resident student stickers. In British Columbia the exemption period is one month; tourists are allowed six months and out-of-province students, a school year, if the vehicles are properly registered in their home jurisdictions. The Yukon Territory grants a 90-day exemption to tourists.

Safety regulations require vehicles to meet certain mechanical and braking standards and stipulate that equipment include non-glare headlights, a proper rear light, a muffler, a windshield wiper, a rear-vision mirror and a horn. All motor vehicles and trailers registered in Nova Scotia must pass an annual safety inspection at an official inspection station. A vehicle which has been sold may not be registered to the new owner unless it passed an inspection while registered to the seller during the past year. Newfoundland requires a certificate of mechanical fitness before renewal of registration for vehicles two years old or more. In Ontario, Manitoba and Newfoundland a certificate of mechanical fitness is required before a vehicle sold on the second-hand market can be issued a permit for operation. At the time of sale, used car dealers must certify that the vehicle complies with the provincial equipment requirements. In Alberta the dealer must issue a certificate indicating whether or not the vehicle complies with the prescribed equipment regulations.

Traffic regulations. In all provinces and territories, vehicles keep to the right-hand side of the road. Everywhere motorists are required to observe traffic signs, lights, etc., placed at strategic points on highways and roads. The speed limit in Prince Edward Island, unless otherwise posted, is 60 mph in daytime and 55 at night; in Manitoba the basic speed limit is 60 mph in daytime and 50 at night unless otherwise posted — speed limits may be raised to 70 mph or modified in semi-built-up areas; in Alberta it is 60 mph in daytime and 50 at night, with the exception of a few selected sections of four-lane highway where higher speeds may be posted; in Nova Scotia the limit is a "reasonable and prudent" speed, with a maximum of 60 mph except where 65 mph is authorized; in Newfoundland the maximum speed is 60 mph unless otherwise posted, but some sections have a 50 mph limit at night; in New Brunswick maximum speeds vary from 50 to 60 mph depending on the type of highway; and in Ontario and Quebec maximum speeds vary from 50 to 70 mph depending on the type of highway. In the other provinces the maximum speed permitted is normally 50 mph; in Saskatchewan and British Columbia higher speed limits are posted where they are in effect. In the Yukon Territory the speed limit for all vehicles is 60 mph, unless otherwise posted. In the Northwest Territories the highway limit is 60 mph for all vehicles, day or night, except as otherwise posted, and in municipalities it is 30 mph except as posted. Slower speeds are required in cities, towns and villages, at road intersections, railway crossings or at other places or times where the view of the highway for a safe distance ahead is in any way obscured. In Nova Scotia, British Columbia and the Northwest Territories slower speeds are also required in school zones and when passing public playgrounds. Most provinces require vehicles to stop when a school bus is stopped to load or discharge children. Truck speed limits are sometimes five miles an hour below automobile speed limits, although in Manitoba, Northwest Territories, Yukon Territory, Prince Edward Island, New Brunswick, Saskatchewan and British Columbia they are the same as for passenger vehicles. In most provinces accidents resulting in personal injury or property damage in excess of \$200 (\$100 in Quebec) must be reported to a police officer (in Nova Scotia to the Registrar of Motor Vehicles or to a police officer; in Quebec to a police officer or to the Motor Vehicle Bureau) and a driver involved must not leave the scene of an accident until he has rendered all possible aid and disclosed his name to the injured party. A similar regulation applies to snow vehicle drivers in Quebec, New Brunswick and Saskatchewan and to any off-highway vehicle driver in Alberta.

Driver licensing controls. All provinces and territories impose penalties for infractions of driving regulations, ranging from fines for minor infractions to suspension of the operator's driving permit, impounding of vehicle or imprisonment for more serious infractions. In most provinces penalties have been linked to a driver-improvement program, the aim of which is to correct faulty driving habits, not to take drivers off the road. The most common driver-improvement program includes the demerit-point system. In Prince Edward Island a driver who is suspended under the demerit-point system must take a driver-improvement course as a condition of reinstatement.

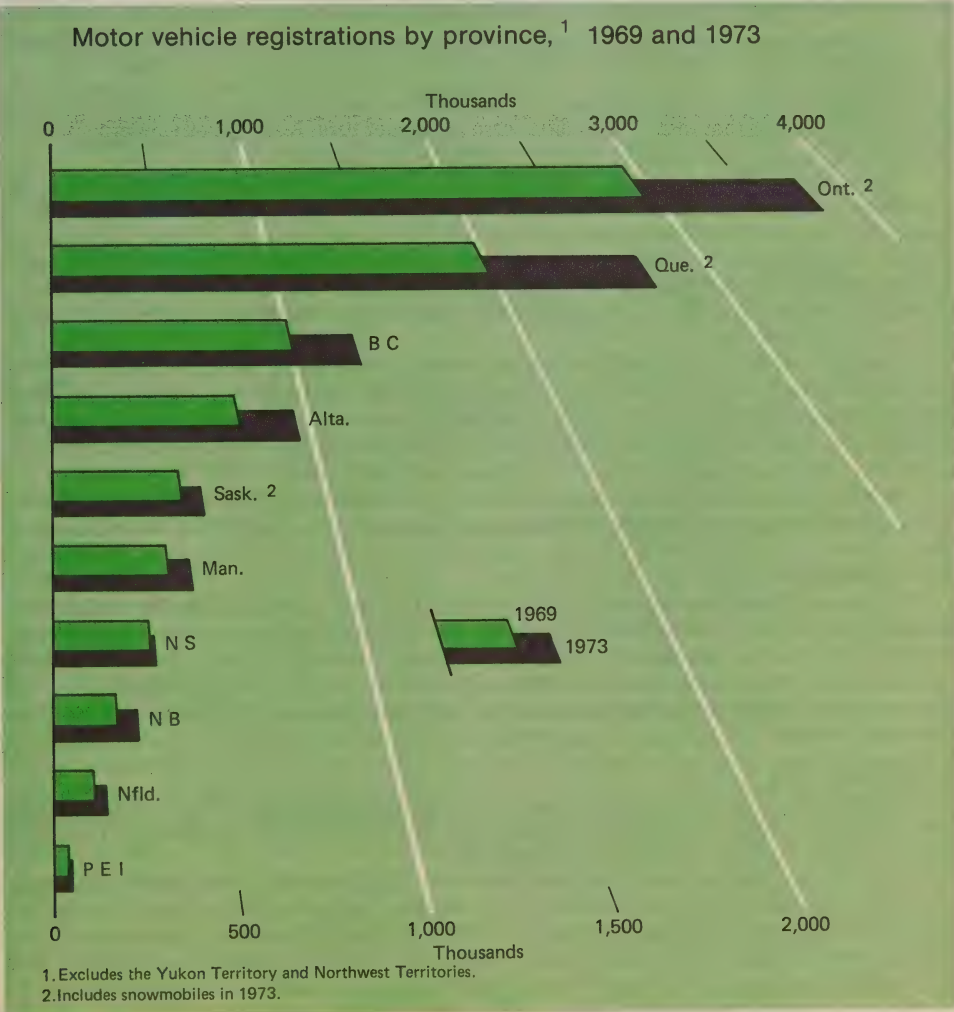
Safety responsibility legislation. Each province has enacted safety responsibility legislation. In general, laws provide for the automatic suspension of the driver's licence and/or motor vehicle registration of a person convicted of a serious offence (impaired driving, driving under suspension, dangerous driving, etc.) or a person whose uninsured vehicle is involved directly or indirectly in an accident resulting in damage in excess of \$200 or injury or death to any person (in Manitoba the amount is \$100 and in Nova Scotia, \$50; in Prince Edward Island suspensions depend on the circumstances of the accident). In Saskatchewan, Quebec, New Brunswick and Nova Scotia, if a judgment is rendered for damages against the driver or owner, the driver's licence and registration remain suspended until the judgment is satisfied and proof of financial responsibility for the future is filed. In Saskatchewan and the Northwest Territories uninsured motor vehicles may be impounded following an accident of any consequence, i.e. an accident resulting in personal injury or death, or property damage in excess of \$200. Under the Quebec Code of Civil Procedure, before judgment the plaintiff may seize the motor vehicle which has caused him damage, whatever the amount of property damage, whether covered for third-party insurance or not. In British Columbia, if a judgment is rendered against a driver and not satisfied, the driver's licence may be suspended until reinstated at the discretion of the Superintendent of Motor Vehicles. In the Yukon Territory an inadequately insured vehicle may be impounded if it is involved in an accident, regardless of the property damage.

In Ontario, Manitoba and Alberta the non-resident motorist is not required to carry or produce any form of proof of insurance. In Ontario the only persons required to file a Certificate of Insurance are those indebted to the Motor Vehicles Accident Claims Fund. If asked by police, registered owners in Nova Scotia must show proof of financial responsibility or face possible prosecution. Conviction results in suspension of both driver's licence and registration until proof of financial responsibility is filed. In Saskatchewan, British Columbia, Alberta (here off-highway vehicles used in a public place must also be insured) and Manitoba, a compulsory insurance plan is in effect for residents, and drivers may at any time be required to show proof of financial responsibility on demand of a peace officer. The British Columbia compulsory insurance law requires that a person who has a driver's licence must also have a driver's insurance certificate. The insurance certificate runs from birthday to birthday, on an annual renewal basis. It costs \$10 a year for a driver with a point penalty record of less than six points. Drivers with six points or more pay surcharges according to the number of point penalties in their driving records. In the Northwest Territories proof of insurance must be supplied before vehicle licence is issued, and when the insurance expires or is cancelled vehicle licence plates must be returned to the Registrar of Motor Vehicles. In both the Yukon Territory and the Northwest Territories certain areas may be exempted from the insurance requirement on order of the Commissioner. In the Northwest Territories public liability and property damage insurance is compulsory for all vehicles operating on the highways regardless of where the vehicle is registered. In Quebec snowmobiles are required to carry insurance in the amount of \$35,000 to cover liability deriving from the use of such vehicle.

Unsatisfied judgment fund. All provinces and territories, except Manitoba, Saskatchewan, British Columbia, Northwest Territories and Yukon Territory, have enacted legislation providing for the establishment of a fund, frequently called an unsatisfied judgment fund (in New Brunswick, the Unsatisfied Judgment and in Ontario and Alberta, the Motor Vehicle Accident Claims Fund). Judgments awarded for damages arising out of motor vehicle accidents which cannot be collected by the ordinary process of law are paid out of this fund. In Newfoundland, Prince Edward Island, Nova Scotia and Quebec the fund is maintained by insurance companies. In all the other provinces, except Saskatchewan, Manitoba and British Columbia where insurance is compulsory, the funds are obtained by collecting an annual fee from the registered owner of every motor vehicle or from every person to whom a driver's

licence is issued. The fee usually does not exceed \$1 a year; in New Brunswick the fee is \$3 a year; in Ontario a fee of \$40 is paid by the uninsured motorist (in the absence of the fee being paid, the uninsured, if apprehended, is liable to a fine) and, in addition, the fund is subsidized by a \$1 annual charge from each licensed driver.

Some provincial legislation covers payment of judgments in hit-and-run accidents. When these occur, if neither the owner nor the driver can be identified, action may be taken against the Registrar of Motor Vehicles (the Minister of Finance in Newfoundland, the Superintendent of Insurance in Ontario and the Administrator of the Motor Vehicle Accident Claims Fund in Alberta); any judgment secured against the responsible authority is paid out of the fund. The amount that can be paid out of the fund on one judgment is limited. In Newfoundland and Nova Scotia the limits are \$10,000 for one person, \$20,000 for two or more persons injured in one accident and \$5,000 for property damage. In Nova Scotia and New Brunswick the limit is \$35,000 in respect of any one accident. In Prince Edward Island and Quebec the limit is \$35,000 for all damages in the same accident, subject to a deduction of \$200 from all damage to the property of others; damages resulting in bodily injury or death are, up to \$30,000, payable by priority over damages to property and the latter are, up to \$5,000, payable by priority over the former out of the amount of any insurance or other guarantee of indemnity. In Alberta the limit is \$50,000 for death or personal injury to one or



more persons and \$5,000 for damage to property, subject to a limit of \$50,000 in any one accident; if, in one accident, claims result from bodily injury to or death of one or more persons and loss of or damage to property, claims arising out of bodily injury or death have priority over claims resulting from loss of or damage to property to the amount of \$45,000, and claims arising out of loss of or damage to property have priority over claims resulting from bodily injury or death to the amount of \$5,000. In Ontario the limits are \$50,000, inclusive of \$5,000 for any property damage claim. Many small claims are handled by the Motor Vehicle Accident Claims Branch (under the Ministry of Consumer and Commercial Relations), subject to a \$50 franchise clause in respect of property damage, but the procedure is such that claims can be settled without resort to litigation. The Minister has the power to act if the defendant is an infant or the defendant owner or driver is deceased.

15.3.3 Road transport statistics

Roads and streets. At the end of 1971 Canada had 315,821 miles of highways and roads under federal or provincial jurisdictions and 202,497 miles of roads and streets under municipal jurisdiction (Table 15.9). Most of this mileage is in the more populated sections. Roads built by logging, pulp and paper, and mining companies provide some access to remote communities but large areas of most provinces and the territories are still very sparsely settled and are virtually without roads.

Table 15.10 presents expenditure data for all roads and streets in 1971-72 and 1972-73. In 1972-73 total expenditures equalled \$2,696 million, an increase of 7.4% over the previous year. Construction expenditures increased 8.4% and maintenance and administration costs rose by 5.8%.

Motor vehicles. Registrations continue to increase yearly, a record of 10.6 million being reached in 1973. Of that total, 7.9 million were passenger cars. Registrations by province are given in Table 15.11 and types of vehicles registered by province in Table 15.12.

The taxation of motive fuels, motor vehicles, garages, drivers, chauffeurs, etc., is an important source of provincial government revenue. In every province licences or permits issued by the provincial authorities are required for motor vehicles, trailers, operators or drivers, paid chauffeurs, dealers, garages and gasoline and service stations. The more important sources from which provincial revenue from motor vehicles is derived are shown in Table 15.13. Motive fuel tax rates and federal government revenue from excise and sales taxes are given in Chapter 20.

Motive fuels for motor vehicle use are taxable at the point of sale. To estimate the amount of fuel sold for motor vehicles, tax-exempt sales to the federal government and other consumers, exports and sales on which tax refunds are paid are eliminated from gross sales. As shown in Table 15.14, consumption of taxable gasoline, which is used almost entirely for automotive purposes, rose 8.1% in 1973 and net sales of diesel oil 21.4%.

Statistics of intercity and rural passenger bus companies for 1972 are shown in Table 15.15. Table 15.16 presents summary statistics of motor carriers (freight) for the same year.

15.4 Water transport

The Canada Shipping Act (RSC 1970, c.S-9) is the most significant statute dealing with shipping. Other important legislative measures include the Pilotage Act, the Arctic Waters Pollution Prevention Act and the Navigable Waters Protection Act. Under the Canada Shipping Act, the Arctic Waters Pollution Prevention Act and their amendments, the Parliament of Canada has complete jurisdiction over the regulation of shipping in Canadian-controlled waters.

15.4.1 Shipping

Except in the case of the coastal trade, all Canadian waterways, including canals, lakes and rivers, are open on equal terms to the shipping of all countries of the world so that Canadian shipping must compete with foreign flag shipping.

The carriage of goods and persons from one Canadian port to another, commonly referred to as the coastal trade, is restricted to ships registered in Canada within the region from Havre-Saint-Pierre on the St. Lawrence River upstream to the head of the Great Lakes. Elsewhere in Canada, the coastal trade is restricted to ships registered and owned in a Commonwealth country.

Canadian registry. Under Part I of the Canada Shipping Act ships exceeding 15 net registered tons and pleasure yachts over 20 net registered tons must be registered; vessels of lower tonnages, if not registered, must be licensed if powered by a motor of 10 hp or more. Section 6 of the Act restricts ownership: an owner must be a British subject, or a body corporate incorporated under the law of a Commonwealth country with its principal place of business in that country. A ship registrable in Canada may be recorded, pending registration, by a Registrar of Shipping while still under construction.

Vessels on the Canadian shipping registry. As at December 31, 1974, there were 30,491 ships constituting 4.1 million gross tons registered in Canada. This represents an increase over the previous calendar year of 952 ships and 122,915 gross tons.

Shipping traffic. Table 15.17 shows the number and tonnage of all vessels (except those of less than 15 registered net tons, naval vessels and fishing vessels) entering Canadian customs and non-customs ports.

Freight movements through large ports take different forms, including cargoes for or from foreign countries and cargoes loaded and unloaded in coastwise shipping, i.e. domestic freight moving between Canadian points. Table 15.18 presents data by province on cargoes loaded and unloaded from vessels in international or coastwise shipping. In 1973 a total of 320.4 million tons were loaded and unloaded at the principal Canadian ports, compared with 299.4 million tons in 1972. In-transit movement in vessels that pass through harbours without loading or unloading and movements from one point to another within harbours are also numerous in many ports.

Shipping statistics, which cover traffic in and out of both customs and non-customs ports, do not include freight in transit or freight moved from one point to another within the harbour. Table 15.19 shows the principal commodities loaded and unloaded in international and coastwise shipping at the 19 ports handling the largest cargo volumes in 1973. These ports handled 82.5% of all Canada's international shipping and 59.6% of the coastwise trade. The specific commodities shown are those transported in volume and often in bulk form.

15.4.2 Ports and harbours

The ports and harbours of Canada comprise 25 large deep-water ports and about 650 smaller ports and multi-purpose government wharves on the east and west coasts, along the St. Lawrence Seaway and Great Lakes, in the Arctic, and on interior lakes and rivers.

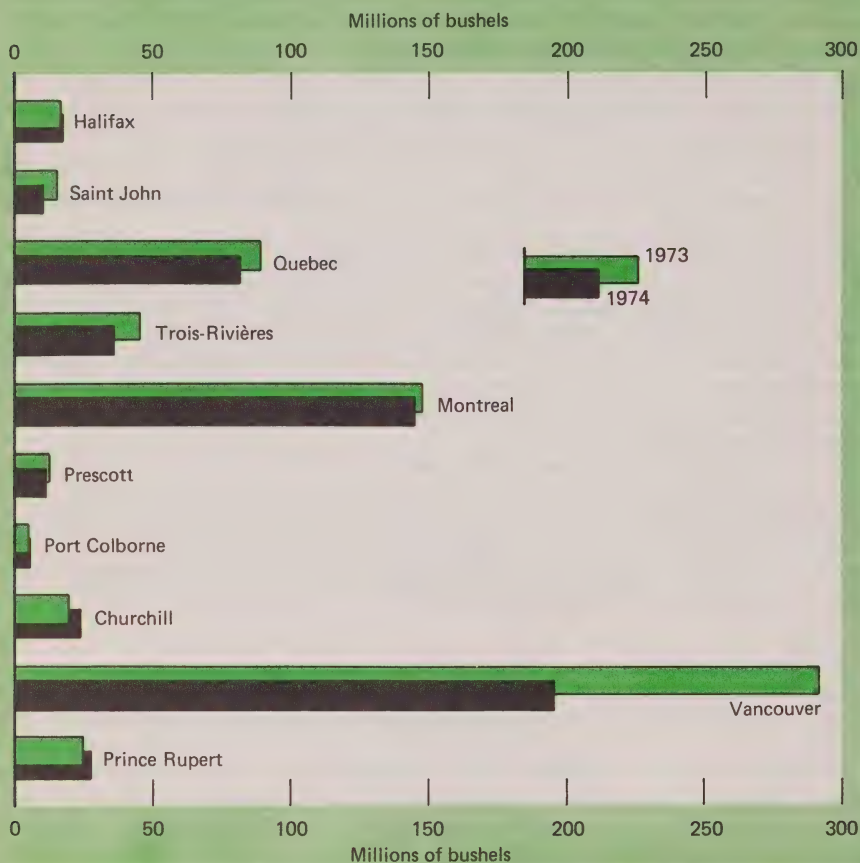
The administration of Canadian ports is generally under the Ministry of Transport's Canadian Marine Transportation Administration. Canada's harbours are subdivided into National Harbours Board ports, harbour commission ports, public harbours and government wharves. About 2,000 fishing harbours and facilities for recreational boating are administered by the Department of the Environment.

The National Harbours Board, a Crown corporation, is responsible for administering the Jacques Cartier and Champlain bridges at Montreal, the grain elevators at Prescott and Port Colborne, Ont. and port facilities such as wharves and piers, transit sheds, grain elevators, etc. at the harbours of St. John's, Nfld.; Halifax, NS; Saint John and Belledune, NB; Sept Îles, Chicoutimi, Baie-des-Ha! Ha!, Quebec, Trois-Rivières and Montreal, Que.; Churchill, Man.; and Vancouver and Prince Rupert, BC. The number of vessels and the amount of tonnage handled at these ports in 1973 and 1974 are reported in Table 15.20.

The capital values of fixed assets administered by the Board amounted to \$436.0 million at December 31, 1973 and \$471.6 million at December 31, 1974; these figures include expenditures on all buildings, machinery and durable plant improvements less deductions for depreciation, and represent a fair approximation of the properties' present value. During 1974 the federal government advanced \$26.5 million to the National Harbours Board for capital expenditures of \$2.0 million at Prince Rupert, \$12.0 million at Vancouver, \$1.6 million at Churchill, \$168,000 at Sept Îles, \$10.0 million at Saint John and \$218,000 at Halifax.

Harbour commissions. Eleven of Canada's major multi-purpose harbours are administered by harbour commissions, federal bodies corporate operating semi-autonomously under the general supervision of the Ministry of Transport. These ports include The Lakehead (Thunder Bay), Windsor, Hamilton, Toronto, Oshawa and Belleville, Ont. on the Great Lakes; Winnipeg-St. Boniface, Man. on the Red River-Lake Winnipeg System; Fraser River (New

Shipments from National Harbours Board grain elevators, 1973 and 1974



Westminster), North Fraser, Nanaimo and Port Alberni, BC. The harbour commissions include municipal as well as federal appointees, and are responsible for general administration, operation and maintenance as well as for close liaison with the Ministry of Transport and with the provincial, regional and local interests they serve.

Public harbours. More than 300 public harbours are directly administered by the Canadian Marine Transportation Administration. Harbour masters and wharfingers at these ports are mostly fees-of-office employees appointed by the Minister of Transport. Some of the larger public harbours are Baie Comeau, Que.; Corner Brook and Come By Chance, Nfld.; Sydney and Port Hawkesbury, NS; Sault Ste Marie and Goderich, Ont.; and Victoria, Kitimat and Tsu, BC.

Government wharves. Many of the government wharves for which the Marine Transportation Administration is responsible are located within public harbours and are used for commercial traffic including auto/truck ferries. Some major interprovincial federal ferry terminals are administered by the Canadian Surface Transportation Administration. Provincial governments administer ferry wharves which are part of an intraprovincial service.

The Ministry of Transport is responsible for planning and providing adequate public port facilities to serve commercial interests and to improve or phase out facilities in response to

economic growth or changes in traffic patterns resulting from new industries, trends to new types of ships and new developments in cargo handling. Specialized deep-water terminals for bulk commodities, particularly coal and oil, are also provided when needed under long-term full cost recovery agreements with individual shippers. These often complement related development programs sponsored by the Department of Regional Economic Expansion.

Rates and charges. The Ministry establishes and collects fees from users of port facilities, and all rates assessed by ports under federal jurisdiction are subject to Ministry approval. Harbour dues, cargo rates, wharfage, berthage and other charges on goods and vessels are subject to some regional and local variation and are designed to recover a reasonable share of the annual federal investment in Canada's harbours through the Department of Public Works as well as the Ministry of Transport and its component agencies.

Private facilities. In addition to public facilities, there are extensive wharf and associated cargo handling facilities owned by private companies, particularly specialized facilities for handling coal, iron ore, petroleum, grain and pulpwood. At Sept Îles, Que. the Iron Ore Company of Canada owns and operates extensive facilities to load pelletized iron ore onto ocean-going and Seaway vessels. Port Cartier harbour was constructed by mining interests in the early 1960s and through large diversified investments of private capital has also become one of Canada's leading export grain terminals. At Port Hawkesbury, NS, Gulf Oil Canada Limited operates a terminal to unload tankers of about 350,000 tons deadweight or larger; in Quebec City Canadian Pacific operates a container terminal at Wolfe's Cove; and at Port Alfred, Que. and Kitimat, BC the Aluminum Company of Canada Limited operates multi-purpose terminals to service their smelter operations. There are also many industry owned and operated marine facilities on the Great Lakes and other interior waterways required for Canadian and international movements of ores, coal, petroleum products, limestone and other bulk materials.

Administrative developments. The National Ports Council, an advisory body to the Marine Transportation Administration, met in March and October 1973 to discuss the views of federal and provincial governments, the National Harbours Board and the harbour commissions with respect to a form of administration for the major ports of Canada which would provide a large measure of local responsibility. Studies of submissions are continuing and a report is expected to be ready for Cabinet consideration in 1975.

Shipping. The continuing trend to the use of larger ships has resulted in increased investment in ports to provide for facilities farther from shore, channel dredging, larger turning basins and more complex systems of aids to navigation and traffic control. Also, environmental considerations often require expensive terminal construction.

Deep-water oil terminals capable of handling tankers of 350,000 tons deadweight and larger, drawing 90 ft of water or more, operate at Port Hawkesbury, NS in the Strait of Canso, Mispic Point, NB near Saint John and at Come By Chance, Nfld. New proposals under intensive study include other sites on the Strait of Canso, Lorneville, NB and on the lower St. Lawrence River. New facilities at Sept Îles, Que. can load ore carriers up to 250,000 tons.

Increasing use of containers brings significant changes in cargo routing and handling. Saint John, Halifax, Quebec, Montreal, Toronto, Vancouver and New Westminster have major container terminals. Both CP Rail and Canadian National operate fast container trains between these ports and inland centres in Canada and the United States.

Container ships travel at speeds up to 33 knots and port turnaround time is critical to the economics of operating them. Port facilities have to be more efficient and specialize; they include special ramps for roll-on roll-off vessels; large container cranes which can handle 20 or more 15-ton containers in an hour; special container packing facilities; large open storage areas for containers, automobiles, lumber and bulk products like coal; and rail and truck loading and unloading facilities. Increasing container storage space rather than handling or ship movement has become the critical factor.

15.4.3 The St. Lawrence Seaway

Events leading up to the beginning of the St. Lawrence Seaway project and the progress made during the years of its construction are covered in earlier editions of the *Canada Year Book*. The 1956 edition (pp 821-829) gives detailed information on Great Lakes-St. Lawrence

waterway traffic immediately before construction began on the project and the *1960 Canada Year Book* (pp 851-860) relates the story of the Seaway during the second year of its operation. The first decade of Seaway development and operations is discussed in the 1969 edition (pp 841-845).

The St. Lawrence Seaway Authority, constituted as a corporation by Act of Parliament in 1951, undertook the construction (and subsequent maintenance and operation) of Canadian facilities between Montreal and Lake Erie to allow navigation by vessels of 27-ft draft. At the same time, construction of similar facilities in the International Rapids Section of the St. Lawrence River was undertaken by the Saint Lawrence Seaway Development Corporation of the United States. The Seaway was opened to commercial traffic on April 1, 1959 and officially inaugurated on June 26, 1959. With its opening, certain ancillary canals were transferred to the Seaway Authority's jurisdiction for operation and maintenance purposes. These include Lachine (closed in 1971), a section of the Cornwall Canal (closed in 1968), a portion of the third Welland Canal and the Canadian lock at Sault Ste Marie. Tolls are not assessed against vessel movements on these waterways and traffic data for them are not included in this Section. Major construction undertaken in 1967 on the channel to bypass the city of Welland was completed for the 1973 navigation season.

Seaway traffic. Tables 15.21 and 15.22 give combined traffic statistics for the St. Lawrence and Welland canals in 1973 and 1974. Duplicate transits are eliminated so that the figures show the actual movement of goods through the St. Lawrence Seaway.

In 1974, 3,182 ships carrying about 25.9 million tons of cargo moved upbound through the Seaway and 3,167 vessels carrying 34.2 million tons moved downbound. Ocean-going ships carried 19.6% of the total cargoes and lakers 80.4%. Of the total tonnage carried upbound in 1974, 20.6 million tons were domestic cargo and 5.3 million tons were foreign traffic; downbound, 27.8 million tons were domestic freight and 6.4 million tons were carried to and from foreign ports.

On the Montreal-Lake Ontario section, upbound traffic amounted to 23.0 million tons in 1974 and downbound traffic to 21.1 million tons, a decrease of 23.4% over 1973. Almost 62.1% of the former was accounted for by iron ore shipped from St. Lawrence ports to Hamilton and Lake Erie and the downbound traffic consisted largely of overseas shipments of grain. There were 924 fewer upbound transits and 941 fewer downbound transits in 1974 than in 1973, indicating a drastic decrease in the number of vessels using this portion of the Seaway. Bulk commodities made up 89.8% of the total traffic through the section in 1974, the principal commodities through the St. Lawrence canals being iron ore, wheat, corn, fuel oil, manufactured iron and steel, and barley. Traffic patterns show that 33.4% of the total movement was between Canadian ports, 40.0% between Canadian and United States ports, and 26.3% consisted of foreign trade to and from Canada and the United States. The small remainder was traffic between ports in the United States.

There were 5,171 transits through the Welland Canal in 1974, with a cargo volume of 20.2 million tons upbound and 32.2 million tons downbound; bulk cargo accounted for 92.5% of the traffic. Although many vessels pass through both the St. Lawrence and Welland canals on "through" trips, there is a substantial amount of local traffic between Great Lakes ports which involves only the Welland Canal. These movements are largely of iron ore, grain and coal. The Welland Canal traffic was 8.2 million tons greater than that reported for the Montreal-Lake Ontario section.

Income of the St. Lawrence Seaway Authority for 1974 amounted to \$23.0 million, made up of toll revenue of \$18.8 million assessed for transits through the Seaway locks between Montreal and Lake Erie and sundry revenues (rentals, wharfage, bridge revenue, etc.) of \$4.2 million. Total expenses (excluding replacement provision) for 1974 amounted to \$31.3 million of which operation and maintenance expenses amounted to \$22.6 million and regional headquarters and headquarters administration expenses to \$8.7 million (Table 15.23).

15.4.4 Federal government marine services

Headquarters organization. The Marine Services of the Ministry of Transport has seven branches — Aids and Waterways, Marine Safety, Canadian Coast Guard, Marine Pilotage, Marine Telecommunications and Electronics, Marine Finance and Marine Personnel — each headed by a director responsible to the Deputy Administrator (Marine Services), Canadian

Marine Transportation Administration. An additional unit, the Marine Emergency Office, also reports to the Deputy Administrator.

The Aids and Waterways Branch has two divisions — Marine Aids and Waterways Development. Marine Aids Division is responsible for planning, policy development and program administration related to a national system of marine aids to navigation and traffic control, and for research and development in these two areas. These responsibilities include the installation, operation and maintenance of electronic navigation systems such as Decca, Loran A and Loran C. They also include the development of port entry systems which involve radar surveillance, traffic control and conventional floating and shore-based aids to navigation. The Division develops standards and guidelines for the operation and maintenance of over 20,000 marine aids to navigation consisting of lightstations, buoys, fog signals and shore-based unattended lights. It carries out research and development related to new atomic and solar power sources as well as on conventional battery and hydro sources. The Marine Aids Division is responsible for administering the Navigable Waters Protection Act. The Waterways Development Division is responsible for developing national plans, policies and programs to improve commercial navigable waterways and for related research, including hydraulic model studies carried out in co-operation with other government agencies.

The Marine Safety Branch has three divisions — Steamship Inspection, Nautical Services and Air Cushion Vehicles. The Branch is responsible for administering the parts of the Canada Shipping Act related to operating Canadian ships and ships within Canadian waters; it is charged with the registering of shipping, licensing ships, certifying ships' officers and engaging and discharging ships' crews. Other responsibilities include safety inspection of ships, handling of dangerous cargoes, investigating marine accidents and administering regulations regarding oil pollution in Canadian waterways.

The Marine Safety Branch protects the interests of the owners of wrecked ships and their cargoes and the interests of the Crown in unclaimed wrecks. It has responsibilities for policy formulation in such matters as the coastal trade, the limitation of liability of ship, wharf and canal owners and the rights and liabilities in disputes between ship owners and cargo owners, *stevedores' liens* and salvage claims.

The Canadian Coast Guard is responsible for the over-all direction of the Canadian Coast Guard fleet which consists of more than 80 active ships including heavy, medium and light ice-breakers, an ice-breaker-cable repair ship and two weather-oceanographic ships which alternate in manning Pacific Weather Station "Papa", 900 miles west of Victoria, BC.

The fleet services thousands of lightstations, shore lights, buoys and other navigation aids along Canada's coasts and inland waterways. During the Ministry of Transport's Arctic resupply operations each summer, Coast Guard ships work in conjunction with chartered commercial vessels to move approximately 500 tons of cargo to five or six northern ports. In the winter the ice-breakers aid commercial shipping in the Gulf of St. Lawrence from Cabot Strait to the Quebec north shore and break ice jams to prevent flooding along the St. Lawrence River, particularly between Trois-Rivières and Montreal.

In addition, Coast Guard ships patrol the St. Lawrence Ship Channel to ensure that it is maintained at its advertised depth; carry out most marine search and rescue operations; and assist other departments doing oceanographic and hydrographic research or investigating Arctic developments. Often a Coast Guard ship is the operational base for the scientific research team.

The Marine Pilotage Branch was established as a separate entity in February 1972 to provide advice on pilotage matters, and is responsible for establishing national technical standards and conducting research required to ensure that these standards are maintained. It is also responsible for prescribing standards for health, uniform financial reporting procedures, procedures for hearings held by Pilotage Authorities, and recommending the establishment of compulsory pilotage areas where an Authority fails to do so and it is considered to be in the public interest.

The Pilotage Act, which came into force February 1, 1972, established the Atlantic Pilotage Authority, Laurentian Pilotage Authority, Great Lakes Pilotage Authority and Pacific Pilotage Authority. Their objectives are to establish, operate, maintain and administer, in the interest of safety, an efficient pilotage service within their respective regions.

The Marine Telecommunications and Electronics Branch is responsible for operating a communications and electronics engineering service in support of Marine Services ships and

operations, for developing new or improved specialized equipment and for providing electronic navigational systems.

The major function of the Marine Emergency Office is the development and execution of oil pollution contingency plans for all territorial waters including those which are contiguous with US waters.

Field organization. In the field, a regional management organization within the Marine Services has been developed to provide the Ministry with more efficient means of matching resources to workloads in all areas. Included in the completed system are 11 established District Marine Agencies, and 15 other Marine Services field offices that in the past have reported individually to Marine Services directors or to the Administrator, Canadian Marine Transportation Administration.

The first step was completed in 1967 with the establishment of the Maritimes Region, covering the Maritime provinces and outlying islands including Sable Island and the Magdalen Islands, and including all Marine Services activities in the three provinces. In 1968 the Western Region, including the Pacific Coast, western and northwestern Canadian waterways and the western Arctic, was established with the same responsibilities as the Maritime Region. Later, Newfoundland (and Labrador) was reorganized using an area concept and reporting through an area manager located at St. John's. The Laurentian Region was established early in 1972 and covers all Marine Services field responsibilities in Quebec other than the Magdalen Islands. The Central Region was established in the summer of 1972 covering Ontario and Manitoba.

Aids to navigation. To ensure safe marine navigation, the Ministry of Transport operates lights, buoys, beacons and two electronic networks working on the hyperbolic principle — Loran and Decca. During the year ended March 31, 1974, 4,124 lights, 378 fog signals, 2,656 lighted buoys and 14,777 unlighted buoys and beacons were maintained in Canadian and contiguous waters.

The Ministry operates a vessel traffic management program in the approaches to both coasts, principal harbours, estuaries and bays leading to ports to provide the maximum element of safety to ships entering and leaving Canadian ports.

All aids incorporating light or sound devices are listed in the Ministry of Transport annual publication, *List of lights, buoys and fog signals*. Information on radio beacons and on Loran and Decca is published in *Radio aids to marine navigation*. Broadcast *Notices to shipping* and weekly editions of *Notices to mariners* provide additional information on marine hazards and related matters.

Steamship inspection. The Board of Steamship Inspection, established under the Canada Shipping Act, formulates and enforces a variety of regulations made under the Act, the most important of which deal with approval of design and construction of ships and equipment, inspection during construction and periodically afterward, the carriage of dangerous goods, accident prevention during cargo operations, pollution prevention and control of the marine environment, and training and certification of marine engineers.

The Board's headquarters is in Ottawa; field offices are maintained in the principal ocean and inland ports. Some 1,800 Canadian owned or registered ships were inspected during the fiscal year ending March 31, 1974.

15.5 Civil aviation

15.5.1 Administration and policy

Administration. Civil aviation in Canada is under the jurisdiction of the federal government and is administered under the authority of the Aeronautics Act and the National Transportation Act as amended. The Aeronautics Act is in three parts. Part I deals with the technical side of civil aviation including matters of aircraft registration, licensing of personnel, establishing and maintaining airports and facilities for air navigation, air traffic control, accident investigation and the safe operation of aircraft. This Part of the Act is administered by the Director General, Civil Aeronautics, under the supervision of the Administrator, Canadian Air Transportation Administration, Ministry of Transport. Part II of the Act deals with the economic aspects of commercial air services and assigns to the Canadian Transport

Commission certain regulatory functions respecting commercial air services. Part III deals with matters of internal administration in connection with the Act.

Federal civil aviation policy. The federal government announced some revisions to its air policy in 1973. On November 23, the Minister of Transport tabled in the House of Commons a "Statement on Air Policy" which listed the following objectives: to ensure safe, efficient and convenient air services to meet the needs of travelling Canadians; to contribute to the economic and social well-being of the country; and to ensure that air services are reasonably balanced to create an atmosphere in which the industry can continue to develop in an efficient and profitable manner without undue burdens on the taxpayer.

On the domestic side, the role of the regional carriers, and their relationship with the mainline carriers (Air Canada and Canadian Pacific Air Lines), remained basically unchanged from that described in the "Statement of Principles for Regional Air Carriers" tabled by the Minister of Transport in the House of Commons on October 20, 1966. These principles are summarized as follows: (1) Regional carriers will provide regular route operations into the North and will operate local or regional routes to supplement the domestic mainline operations of Air Canada and CP Air. (2) Greater scope will be allowed regional carriers in developing routes and services by the following means: where appropriate, limited competition on mainline route segments of Air Canada or CP Air may be permitted to regional carriers; in a few cases, secondary routes at present operated by the mainline carriers may become eligible for transfer to regional carriers; and a large role will be allotted to regional carriers in connection with the development of domestic and international charter services, package tours and new types of services. (3) Greater co-operation between the mainline and regional carriers will be developed in a variety of fields, ranging from technical and servicing arrangements to joint-fare arrangements. (4) A limited policy of temporary subsidies for regional routes will be introduced, to be based on a "use it or lose it" formula. (5) Firmer control will be exercised over the financial structure of regional carriers in connection with new licensing arrangements. (6) Regional carriers will be assisted in acquiring aircraft through a scheme for consultation between government and the carriers and among the individual carriers.

In a statement made on August 15, 1969, the Minister of Transport defined more precisely the regions in which each of the five regional carriers would be permitted to supplement, or authorized to replace, mainline operations as circumstances warranted. The CTC's Air Transport Committee issued a number of decisions authorizing new services by regional air-carriers in accordance with the regional air policy, which the Committee is continuing to apply.

The relative roles of Air Canada and CP Air in the domestic sphere were defined in the transcontinental policy of 1967. These were based on a formula that would maintain Air Canada's pre-eminence on transcontinental services, on the assumption that the carrier might from time to time be called on to perform special services which would not necessarily be in its commercial best interests.

The development of air policy continues, with a new focus on the particular question of third level or local air-carriers, whose scope of operation is increasing rapidly.

With respect to the international operations of the two major airlines, the policy statement of November 1973 outlined a number of principles which stressed that the economic viability of proposed routes was to remain a major consideration so that international services would generally not be established solely for national prestige. The government reaffirmed that it would refrain from granting or seeking temporary authorizations for international scheduled services, and authorized a series of bilateral negotiations with a number of foreign countries. Co-operation between the two major carriers was also encouraged. The policy assigned specific areas and countries to Air Canada and CP Air which they would serve once bilateral agreements had been satisfactorily concluded. This division was aimed at assisting the airlines in long-range planning for both passenger and cargo services.

Canada's position in the field of aviation as well as its geographical location makes imperative its co-operation with other nations engaged in international civil aviation. Canada therefore took a major part in the original discussions that led to the establishment of the International Civil Aviation Organization which has its headquarters in Montreal. By the end of 1973, Canada had bilateral agreements with 26 other countries. New air agreements were signed with the Federal Republic of Germany and with the People's Republic of China.

Air traffic control. The primary functions of air traffic control in the Ministry of Transport are to prevent collisions between aircraft operating within controlled airspace and between aircraft and obstructions on the manoeuvring area of controlled airports, and to expedite and maintain a safe, orderly flow of air traffic. These functions are carried out by air traffic controllers in airport control towers, terminal control units and area control centres.

Airport control service is provided to aircraft operating on the manoeuvring area or in the close vicinity (five to 10 nautical-mile radius) of civil airports where the volume and complexity of air traffic indicate its need in the interest of flight safety. Service is also provided to other traffic, such as vehicles and maintenance equipment, on the manoeuvring area of an airport. Radio is the prime means of communication, although light signals may be used where radio is not available. Airport control towers are in operation at: Gander International, St. John's, and Wabush (Labrador), Nfld.; Halifax International and Sydney, NS; Charlottetown, PEI; Fredericton, Moncton and Saint John, NB; Baie Comeau, Montreal International, Quebec, Saint-Honoré, Saint-Hubert, Saint-Jean, Sept Îles, and Victoria Stolport, Que.; Buttonville, Hamilton, Kenora, Kitchener, London, North Bay, Oshawa, Ottawa International, Ottawa Stolport, Sault Ste Marie, St. Catharines, Sudbury, Thunder Bay, Toronto International, Toronto Island, Waterloo-Wellington, and Windsor, Ont.; Brandon, St. Andrew's, Thompson and Winnipeg International, Man.; Regina and Saskatoon, Sask.; Calgary International, Edmonton International, Edmonton Industrial, Grande Prairie, Lethbridge, Red Deer and Springbank, Alta.; Abbotsford, Fort St. John, Kamloops, Kelowna, Langley, Penticton, Pitt Meadows, Port Hardy, Prince George, Vancouver International and Victoria International, BC; Whitehorse, YT; Inuvik and Yellowknife, NWT. A transportable tower has been purchased for use where required in the North, and is in storage in Edmonton. Each region has a mobile control tower for use with air shows.

Terminal control service is provided to aircraft which are "climbing out", after departure from, or "letting down" for a landing at an airport. It is a service provided to flights operating in accordance with the instrument flight rules in order to separate them from one another and from en route aircraft operating through the terminal area which normally is an airspace within 30-50 nautical miles of an airport and which, in some cases, may encompass more than one airport. Radar is normally used, in conjunction with direct controller-pilot radio communication. Procedural means are used at some remote locations where radar is not yet available. The service is provided from all area control centres but separate terminal control units are installed at high-traffic-density airports where no area control centre is located. Such separate units have been established at Halifax, Quebec City, North Bay, Ottawa, Thunder Bay, Regina, Saskatoon and Calgary.

Area control service is essentially an aircraft separation and flight-following service provided to aircraft operating en route between airports. All flights that elect to file flight plans are given flight-following service and separation is provided to all aircraft operating according to the rules for instrument flight or controlled visual flight within designated controlled airspace. Designated controlled airspace consists of (1) high level airspace, i.e. the Southern Control Area, at and above 1,800 ft above sea level (asl); the Northern Control Area, at and above flight level 230; and the Arctic Control Area, at and above flight level 290; and (2) low level airspace, i.e. all airways, terminal control areas and control area extensions in airspace below the high level airspace. In addition, separation is provided to aircraft operating above 5,500 ft asl over almost all of the western half of the North Atlantic Ocean. Separation is provided using both radar and procedural means, with direct and indirect communication between controller and pilot. An extensive land line communication system links an area control centre with all affiliated airport control towers, terminal control units and communication stations and with adjacent area control centres in Canada and adjoining states, as well as with other agencies providing supporting and auxiliary services or having a need to deal directly with the centre, such as air-carrier operations agencies and military operations agencies. Area control centres provide several additional services. The Aircraft Movement Information Service assists the Department of National Defence in identifying all aircraft operating in specified areas. The Customs Notification Service facilitates the notification of appropriate customs agencies by pilots planning to cross the Canada-United States border. When necessary, appropriate search and rescue organizations are notified by the Alerting Service. Pilots en route may receive current information such as weather reports and field condition reports from the Flight Information Service. Area control centres are located at

Gander, Nfld.; Moncton, NB; Montreal, Que.; Toronto, Ont.; Winnipeg, Man.; Edmonton, Alta.; and Vancouver, BC.

Four new and improved terminal radar units have been purchased for installation at Moncton, Montreal, Edmonton and Vancouver. The unit now at Vancouver will be transferred to Gander to replace the older type now in use there.

The Airspace Reservation Coordination Office provides reserved airspace for specified operations within controlled airspace and information to other pilots concerning these reservations and military activity areas in controlled and uncontrolled airspace. The Office, located in Ottawa, is responsible for providing the service in all Canadian airspace and in the Gander Oceanic Control Area.

15.5.2 Commercial air services

The Canadian flag carriers operating international and domestic air routes are Air Canada and CP Air, which together earn 71% of the total operating revenues of Canadian commercial air-carriers. The five regional carriers (Eastern Provincial Airways, Nordair, Quebecair, Pacific Western Airlines and Transair) earn 12% of the total operating revenues. The remaining 17% is earned by some 600 smaller airlines, many of them operating in areas of Canada which are relatively inaccessible by surface transport. On international routes, the Canadian flag carriers provide scheduled services to Europe, the Soviet Union, Asia Minor, the People's Republic of China, Japan and Hong Kong, Mexico and South America, the Caribbean, Australia and the United States (including Hawaii). Thirty-two foreign airlines have scheduled services between Canada and other countries.

The Canadian Transport Commission (Air Transport Committee) in its Directory of Canadian Commercial Air Services classifies commercial air-carriers into two major groups, domestic and international.

Domestic air-carriers, which operate wholly within Canada, are divided into seven classes: (1) Scheduled carriers provide public transportation of persons, goods or mail to designated points according to a service schedule, at a toll per unit; (2) Regular Specific Point carriers, to the extent that facilities are available, provide public transportation of persons, etc., to points according to a service pattern, at a toll per unit; (3) Specific Point carriers provide public transportation, serving points consistent with traffic requirements and operating conditions, at a toll per unit; (4) Charter carriers offer public transportation from a base specified in the licence, at a toll per mile or per hour for the charter of the entire aircraft, or at such other tolls as may be permitted by the Air Transport Committee; (5) Contract carriers do not offer public transportation, but carry persons or goods solely under contract; (6) Flying clubs are incorporated as non-profit organizations and provide flying training and recreational flying; (7) Specialty carriers operate for purposes not provided by other classes such as aerial photography and survey, aerial distribution (crop dusting, seeding), aerial inspection, reconnaissance and advertising, aerial control (fire control, fire-fighting, fog dispersal), aerial construction and air ambulance and mercy services.

International air-carriers, which operate between points in Canada and points in any other country, constitute two more classes of carrier: (8) International Scheduled carriers provide public transportation serving points according to a service schedule, at a toll per unit; and (9) International carriers are domestic and foreign air-carriers which operate any commercial service performed by domestic carriers in (2), (3), (4) and (5).

15.5.2.1 Canada's international flag carriers

Air Canada, a Crown corporation incorporated in 1937 as Trans-Canada Air Lines, maintains passenger, mail and commodity services over a network extending to 31 destinations in Canada, the United States, Ireland, the British Isles, Europe, Bermuda and the Caribbean. After earning net profits in all but one of the last 10 years, the company has been adversely affected by world economic pressures especially in the area of fuel, and as a result, a loss of \$9.2 million was recorded for 1974. Air Canada carried 10.7 million revenue passengers in 1974, a 7% increase over 1973.

Available seat-miles on scheduled flights increased in 1974 to 16.1 billion compared with 14.4 billion in 1973. Revenue passenger-miles grew by 7% to 10.2 billion. Passenger load factor across the system was 64.0%, down from 67.0% in 1973. Total revenue ton-miles equalled 1.3 billion while air freight ton-miles totalled 239.6 million. Passenger revenues amounted to

\$708.3 million in 1974, up from \$568.9 million in 1973. Total revenues were \$848.5 million, compared with \$698.0 million in 1973. Operating expenses in 1974 climbed to \$814.7 million, compared with \$651.7 million the previous year.

At December 31, 1974 the airline's fleet consisted of 106 aircraft: five Boeing 747s, 10 Lockheed L-1011s, 38 DC-8s, and 53 DC-9s. Two L-1011s were operated from May through October under a lease agreement, which makes them available for the busy summer period until 1987.

Canadian Pacific Air Lines Limited (CP Air), a private airline, was established in 1942 by integrating 10 air-carrier bushline companies and has since developed into a major international flag carrier. In 1974 CP Air carried 2.2 million revenue passengers and flew 3.1 billion passenger-miles. Operating revenues for the year reached \$276.8 million.

CP Air's network radiates from the company's headquarters in Vancouver to Japan, Hong Kong, the Netherlands, Hawaii, Fiji, Australia, Portugal, Spain, Italy, Greece, Israel, Mexico, Peru, Chile and Argentina. There are regular west coast flights between Vancouver and San Francisco. Service from Vancouver to Shanghai and Peking was scheduled to begin in the first half of 1974. In November 1973, the Minister of Transport announced certain revisions to the government's international aviation policy and, at the same time, designated CP Air to serve Milan, Italy. The policy statement confirmed CP Air's rights on the routes it now serves and gave it, in addition, the possibilities of serving North Africa, Iran, Brazil, and new destinations in the Pacific and the Far East where the airline's operations are important to Canada's relations with the developing nations. A new bilateral agreement signed in 1973 gave CP Air the right to serve new destinations in the United States. Within Canada CP Air's transcontinental services link Vancouver, Edmonton, Calgary, Winnipeg, Toronto, Ottawa and Montreal; the company also operates interior services in British Columbia and the Yukon Territory. CP Air operates 29 aircraft: four Boeing 747s, 12 Douglas DC-8s, seven Boeing 737s and six Boeing 727s.

15.5.2.2 Regional airlines

Eastern Provincial Airways (1963) Limited is the regional carrier for the Atlantic provinces. In 1974 it carried 593,636 revenue passengers 239 million passenger-miles, and 5,306 tons of freight 2.7 million ton-miles. Operating revenues were \$28.4 million, 34% higher than 1973 revenues of \$21.2 million. Scheduled services were operated to Charlottetown, PEI; Moncton-Chatham-Charlo-Fredericton and Saint John, NB; Sydney and Halifax, NS; Deer Lake-Stephenville-Gander-St. John's and St. Anthony, Nfld.; Goose Bay-Wabush (Labrador City) and Churchill Falls in Labrador; and Montreal and the Magdalen Islands in Quebec.

The company's fleet at the end of 1974 consisted of six Boeing 737s, three Handley-Page Dart Heralds and one DC-3.

Nordair Ltée-Ltd., with its head office at Dorval, Que., was established in 1957 by the merger of Mont Laurier Aviation and Boreal Airways. Since its formation Nordair has expanded steadily and operates scheduled services in Quebec, Ontario and the Northwest Territories, as well as extensive domestic and international charter flights throughout Canada and from eastern Canada to the southern United States and the Caribbean.

Scheduled services operate between Montreal, Ottawa, Hamilton, Windsor and Pittsburgh. In 1974, 156,687 passengers were carried on these routes. Scheduled services are also operated between Montreal, Val-d'Or, Fort George, Matagami, La Grande, Chibougamau, Great Whale River and Fort Chimo, Que. and Frobisher Bay and Resolute Bay, NWT; 92,939 passengers and 7,702 tons of cargo were moved between these points in 1974. Nordair also maintains an extensive regular air service from Frobisher Bay, NWT, supplying numerous Arctic settlements in the Baffin Island area, such as Clyde River-Cape Christian, Broughton Island, Pangnirtung, Cape Dorset, Hall Beach and Igloolik. An application is before the Danish civil aviation authorities for permission to inaugurate regular air service between Frobisher Bay and Sondrestrom-Fjord in Greenland. This application already has the approval of the Canadian government.

Nordair's charter flights accommodate inclusive tour travels and group travel. Its northern charter operation is based at Frobisher Bay where a variety of aircraft, including wheel-, ski- and float-equipped aircraft, are available. Under contract Nordair also provides lateral air services between the DEW-line sites along the Arctic Coast and two specially

equipped Electra aircraft operate extensive ice reconnaissance services for the federal Department of the Environment. Nordair's fleet is composed of one Douglas DC-8-61F, five Boeing 737-200Cs, three Lockheed L-188 turbo-props, three F-227s, three Twin Otters, one Short Skyvan, and one Grumman Turbo Mallard and two Douglas DC-3s.

Pacific Western Airlines Limited, with head office at Vancouver International Airport, operates over 14,000 route-miles. Regularly scheduled mainline services are operated northbound from Edmonton to Prince George and Dawson Creek, BC; Peace River, High Level, Fort McMurray, Rainbow Lake and Fort Chipewyan, Alta.; Uranium City, Sask.; Fort Resolution, Hay River, Fort Smith, Fort Simpson, Rigley, Norman Wells, Inuvik, Yellowknife, Cambridge Bay and Resolute, NWT. The only no-reservations-required Airbus service in Canada operates daily between Calgary and Edmonton, Alta. On the Pacific Coast mainline services are operated from Vancouver to Comox, Powell River, Campbell River and Port Hardy, and Sandspit. In the interior of British Columbia, Pacific Western operates scheduled services from Vancouver to Kelowna, Penticton, Cranbrook, Kamloops and through to Calgary; Vancouver to Castlegar and Calgary; and Vancouver to Williams Lake, Quesnel and Smithers. The company also operates international charter passenger services from Vancouver, Edmonton and Calgary and extensive freight services, both over the entire scheduled domestic route system and chartered.

In 1974, more than 1.9 million revenue passengers were carried; revenue passenger-miles totalled 670.1 million miles, cargo ton-miles were 60.4 million and aircraft miles flown numbered 15.3 million. Comparable figures for 1973 were 1.7 million, 620.9 million, 56.3 million and 14.8 million, respectively. Pacific Western Airlines operates 24 aircraft: two Boeing 727s, two Boeing 707s, nine Boeing 737s, five Convair 640 jet props, four Lockheed Hercules (freight) and two Lockheed Electras (passenger and freight).

Quebecair, with its head office at Montreal International Airport, Dorval, offers scheduled services in Quebec and Labrador. The company was founded in 1946 under the name Le Syndicat d'Aviation de Rimouski. The name was changed to Rimouski Airlines in 1947 and to Quebecair in 1953 when it was amalgamated with Gulf Aviation. During 1965 Quebecair acquired Northern Wings Limited and Northern Wings Helicopters Limited and in 1967, A. Fecteau Transport Aérien Ltée.

Quebecair is responsible for operating scheduled services and the subsidiaries handle flights by light aircraft, charter and contract services. Scheduled services are operated over 6,000 miles serving some 43 localities in nine economic regions of Quebec and Labrador. Points linked are Montreal, Quebec City, Murray Bay (Charlevoix), Baie Comeau (Hauterive), Churchill Falls (Twin Falls), Gagnon, Wabush (Labrador City), Mingan, Mont-Joli-Rimouski, Rivière-au-Tonnerre, Saguenay (Bagotville), Schefferville, Sept Îles, Senneterre, Mistassini, Témiscaming, Lac Doda, Lac Caché, Lac Mistassini, Rupert River, Fort George, Obedjivan, Oskelaneo, Manouane, Val-d'Or, Amos, Lebel-sur-Quévillon, Rupert House, Chibougamau, Matagami, Blanc Sablon, Saint-Paul, Old Fort Bay, Saint-Augustin, La Tabatière, Tête à la Baleine, Harrington Harbour, Gethsemani, Kégaska, Natashquan, Aguanish, Baie Johan Beetz and Havre-Saint-Pierre. Quebecair also operates group charters within Canada and to the United States, the Caribbean, Bermuda, Mexico and South America, using jet aircraft.

Revenue passengers transported by Quebecair in 1974 numbered 592,150 on a total of 248.0 million passenger-miles; goods were hauled on a total of just under 5 million ton-miles. Operating revenues rose from \$14.4 million in 1973 to \$24.3 million.

Quebecair's large and varied fleet of aircraft enables it to meet the diverse requirements of today's charter market. The combined fleet of Quebecair and its subsidiaries totalled 71 units: three BAC 111 jets, six Douglas DC-3s, 11 DHC-3 Otters, three Cessna 180s, three Beechcraft Queen Air 80s, four F-27 turbo-props, two Boeing 707s, one Boeing 727, 14 DHC-6 Beavers, three Cessna 185s, three Piper 23s, two Piper 31s, one Beechcraft 99, one Hawker-Siddeley and 14 helicopters.

Transair Limited. This company was formed in November 1969 through the merger of Transair Limited and Midwest Airlines Ltd., both of Winnipeg. With headquarters at the Winnipeg International Airport, the company operates scheduled services in Manitoba, Ontario and the Northwest Territories and charter flights from Canada to the United States,

Mexico and the Caribbean. The company's scheduled services are operated in Manitoba — from Winnipeg to The Pas—Flin Flon—Lynn Lake—Thompson and return; from Winnipeg to Thompson—Churchill and return; from Winnipeg to Norway House and return; Eastern — from Winnipeg to Thunder Bay—Toronto and return; from Winnipeg to Kenora—Dryden—Thunder Bay—Sault Ste Marie—Toronto and return; from Winnipeg to Red Lake and return; and Arctic — from Churchill to Eskimo Point—Rankin Inlet—Baker Lake and return; from Churchill to Coral Harbour—Repulse Bay—Hall Beach and return; and from Winnipeg to Churchill—Yellowknife and return. Several other points in the Northwest Territories are also served by flights from Churchill.

Transair's fleet comprises 24 aircraft, including 11 helicopters, three Boeing 737 twin jets, two Fokker F-28 jets, two Argosy 222 freighters capable of carrying 28,500 lb., two YS-11s, three Twin Otters and a Boeing 707. Since 1961, under contract with the United States Air Force, Transair has operated the vertical re-supply flights to the four main sites in the Canadian sector of the DEW-line in the high Arctic from Winnipeg and Churchill.

In 1973 Transair flew 6.4 million miles and carried 405,000 passengers 225.0 million passenger-miles, compared with 327,707 passengers for 159.0 million passenger-miles in 1972. Operating revenues equalled \$17.5 million in 1973 and \$16.9 million in 1972.

15.5.2.3 Commonwealth and foreign scheduled commercial air services

At the end of 1974 there were 32 foreign air-carriers holding valid Canadian operating certificates and licences issued for international scheduled commercial air services into Canada: Aeroflot (USSR), Aeronaves de México, S.A., Air France, Air Jamaica (1968) Ltd., Alitalia-Linee Aeree Italiane, Allegheny Airlines Inc., American Airlines Inc., British Airways, British West Indian Airways, Czechoslovak Airlines, Delta Airlines Inc., Eastern Air Lines, El Al Israel Airlines Ltd., Frontier Airlines Inc., Hughes Air West, a division of Hughes Air Corporation, Iberia Air Lines of Spain, Irish International Airlines, Japan Air Lines Company Ltd., KLM Royal Dutch Airlines, Lufthansa German Airlines, North Central Airlines Inc., Northwest Airlines Inc., Olympic Airways S.A., Qantas Airways Limited, Sabena Belgian World Airlines, Scandinavian Airlines System, Seaboard World Airlines Inc., Swissair, Transportes Aereos Portugueses S.A.R.L., United Air Lines Inc., Western Air Lines Inc. and Wien Air Alaska, Inc.

15.5.3 Civil aviation statistics

Airport activity. In 1974, 183 reporting airports recorded 7.4 million take-offs and landings. There are 57 airports which have air traffic control towers supervised by the Ministry of Transport or are municipally run while four have towers controlled by the Department of National Defence. These airports handled 5.7 million movements (Table 15.24) and the remaining 122 airports without towers reported 1.6 million movements.

At airports with control towers total movements rose by 438,741, an 8.4% increase over 1973. Local traffic went up by 18.2% (485,825) which offset a decrease of 47,084 movements in itinerant activity.

Toronto International airport continued to lead in itinerant activity with 226,921 movements, Montreal International retained second place with 186,097, Vancouver International was third with 180,759 while Edmonton Industrial and Winnipeg International held the fourth and fifth positions with 120,002 and 112,942 movements, respectively.

There were 251,123 international movements, 7,435 more than in 1973 which represents a 3.0% increase. Toronto and Montreal International airports were again responsible for over half (51.6%) of the international total. Toronto handled 64,990 "transborder" (to and from the United States) and 12,098 "other international" movements (to and from points outside Canada and the United States). Montreal reported 36,489 "transborder" and 16,064 "other international" movements.

Aircraft with a maximum take-off weight of less than 4,000 lb. accounted for 45.8% of all itinerant movement and those weighing over 39,000 lb. accounted for over 30%. Heavy aircraft activity (e.g. Boeing 747) continued to increase significantly in the period.

The 1974 survey shows that the 122 airports without air traffic control towers handled 1.6 million movements, an increase of 7.2% over the total number recorded by 121 airports in 1973. A 10.5% increase brought the yearly itinerant total to 591,962. Local movements, primarily training flights, numbered 1,035,395 which is 5.4% more than the previous year.

Commercial air services. Tables 15.25 and 15.26 provide statistics on commercial air services performed by Canadian airlines with gross annual flying revenues exceeding \$150,000 and by scheduled foreign airlines. The data for Canadian airlines refer to both domestic and international operations. Figures for the scheduled foreign airlines pertain only to the hours and miles flown over Canadian territory, excluding passengers and goods in transit through Canada. Table 15.26 contains comparative data for domestic and international traffic in 1973.

Personnel licences. At December 31, 1974 the total number of personnel licences in force in Canada was 51,034 compared with 46,206 on the same date in 1973. The 1974 licences were constituted as follows with comparable 1973 figures in parentheses: glider pilots 1,821 (1,438), private pilots 31,656 (29,075), commercial pilots 6,522 (5,691), senior commercial pilots 876 (785), airline transport pilots 3,999 (3,450), flight navigators 186 (198), air traffic controllers 1,818 (1,674), flight engineers 141 (127), aircraft maintenance engineers 4,009 (3,762) and gyrocopter pilots 6 (6).

15.6 Urban transportation

Almost 60% of all transportation activity in Canada takes place in urban areas, where approximately 75% of the population lives. Of 8 million cars registered in 1973, 5 million were found in cities and accounted for 80% of all urban travel. Municipal transit companies operate buses, trains, subways and streetcars, but in spite of a substantial capital investment in facilities and vehicles, have had limited success in competing with the flexibility, comfort and privacy afforded by the automobile. However, a growing adverse public reaction to further road building and increasing concern over the air pollution and congestion generated by private cars has led to a new emphasis on public transit. Summary statistics of urban transit systems are shown in Table 15.27.

Although provincial and municipal governments have greater responsibility for urban transportation, the federal government is reviewing its transportation policies with particular regard to their effect on urban areas. Airports, ports and rail services are the most important federal concerns but there have been direct initiatives in the urban transit field. The government has granted Ontario \$10 million for the purchase of rolling stock for a commuter rail service between Toronto's Union Station and Richmond Hill. The planned Urban Transportation Development Corporation is intended to develop and market new transit vehicles and systems for Canada and for export. The Corporation will also test new ideas in traffic management and operational methods.

The demand for adequate transport facilities in urban areas has placed a heavy financial burden on municipalities. Provincial cost-sharing programs which have contributed to the capital and operating costs of transportation systems in urban areas have until recently been strongly oriented to freeways and roads. Several provinces are now shifting the emphasis from highway construction toward transit planning and construction.

In Manitoba a feasibility study is being undertaken at a cost of \$300,000 on development of a seven-mile-long transportation corridor, along an existing railway right-of-way, from the city centre to the University of Manitoba. The study is being supported by the federal, provincial and Winnipeg municipal governments.

The province has provided \$250,000 for innovative transit programs in Winnipeg including a dial-a-bus system for the southern part of the city, a downtown free shuttle service (DASH) operating during business hours, suburban feeder services in four areas of the city where roads are not adequate for regular buses, a bus shelter design program, and a preferential signing and control system for buses at a number of major intersections.

The province also provided direct grants of \$3.8 million to Winnipeg, \$82,500 to Brandon, and \$9,000 to Flin Flon to help cover operating deficits.

In Saskatchewan the provincial government was involved in the introduction of Telebus in Regina in 1971. Telebus offers door-to-door service within individual zones of the city and door-to-connection with scheduled line service for trips between zones. Most of the vehicles are small, carrying 16-24 passengers, but during peak hours standard 42-passenger buses are added to increase capacity. About one third of Regina now receives full service and the entire area receives at least part-time service. Initial feasibility studies were sponsored and financed by the federal, provincial and municipal governments.

In 1974 the provincial government initiated a \$1 million program of assistance for urban transit. The program provides assistance to cities covering 50% of the cost of approved rolling stock, 75% of the cost of transit facility construction, and provides a three-cent-per-passenger-carried subsidy. Funding for the program was expected to increase in 1975 as the four cities with existing transit systems took advantage of the program and as Saskatchewan's other seven cities studied the application to their own situation.

Efforts to co-ordinate transportation planning and operations among municipalities in Ontario began to show firm results with a series of recommendations for the formation of Ontario's first regional transit authority. The Toronto Area Transit Operating Authority (TATO), established in 1974, will serve as a model for similar transit bodies throughout the province in working toward a co-ordinated service for the region.

One of Ontario's most successful urban transit programs is the east-west Lakeshore GO Train service between Oakville and Pickering, a distance of 42 miles. The service takes commuters into the core of Toronto from suburban areas. Serving 13 stations in the corridor, the system's focal point is Toronto's Union Station from which passengers have immediate access to the metropolitan transportation grid. The Lakeshore service effectively removes an estimated 14,000 cars from Metropolitan Toronto roads each day. It is operated by TATO under contract to the Ontario government on Canadian National Railways rights-of-way.

A second GO Train system extending 30 miles northwest from Union Station serves seven more communities in an area where residents frequently travel between their homes and downtown Toronto.

Dial-a-bus, another GO Transit project, operated in Metropolitan Toronto on an experimental basis. Dial-a-bus systems were installed in three separate parts of Metro to determine whether or not this concept will work in complex urban areas.

Canada's first dial-a-bus service was inaugurated in July 1970 as an experiment in the Bay Ridges area east of Toronto. The province turned the operation over to Pickering township in early 1973.

Ontario has an Urban Transportation Subsidy Program, administered by the Ministry of Transportation and Communications, that encourages the upgrading and use of public transit. Under the subsidy program, the province pays 50% of a municipality's public transit operating deficit, 75% of the capital expenditures, and 75% of costs for transit studies.

In 1974 operating subsidies totalled approximately \$36 million; capital subsidies approximated \$17 million and transit study subsidies \$357,787. An additional \$24 million was paid to Metropolitan Toronto in 1974 in subway subsidies.

Other programs included the rehabilitation of streetcar tracks, completion of a streetcar rebuilding program, a trolley route conversion program, the purchase of a surface rail grinding unit and service track for overhead wiring.

Other transportation programs subsidized by the province are: a program to alter peak time transportation demand in cities known as variable, staggered or flexible working hours; demonstrations in various Ontario communities to test new ideas in public transit or improve existing ones; a program to upgrade and expand computer controlled traffic systems; and continuation of studies in co-operation with municipalities to maximize use of existing roads.

Transit demonstration projects funded 100% by the province include Trans-Cab in Peterborough, Dial-a-bus in the York Mills area of Toronto, the Worker Bus experiment in Sudbury, and the Marketing Demonstration in Kingston.

The provincial government established the Ontario Transportation Development Corporation as a government-industry organization which will provide motivation and leadership in research and development of improved urban transportation systems for markets in Canada, the US and elsewhere. It will also promote development of all types of new technology relating to public transit and authorize funds for research.

British Columbia has initiated a new public transit program under legislation enacted in 1974. The Transit Services Act provides for the Minister of Municipal Affairs to act in all matters to plan, construct, and operate public transit systems in communities and regional districts in the province. The Provincial Transit Fund Act also enacted in 1974 directs \$27 million to public transit programs under the Transit Services Act. The Provincial Rapid Transit Subsidy Act enacted in 1972 provides for provincial assistance to transit systems operated by public transit authorities in British Columbia. Provincial funding of transit services in local

communities is 50% of annual operating deficits, and 100% of capital costs of transit systems. Under this program British Columbia is establishing a provincial pool of transit vehicles to be assigned to the several provincial operating agencies that provide the daily bus services in each region of British Columbia.

In 1975 the province was operating four provincial Crown corporations to serve Greater Victoria and Vancouver Island and Greater Vancouver and the Lower Mainland. Current plans call for new transit operating agencies in the Okanagan and the Northern British Columbia regions to provide bus services in urban centres currently without public transit authorities.

Transit services in British Columbia are planned by the Bureau of Transit Services in the Department of Municipal Affairs. The design of transit services is carried out in conjunction with the review process of community and regional planning by the Planning Division of Municipal Affairs.

Sources

- 15.1 Canadian Transport Commission.
- 15.2 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 15.2.1 Canadian Transport Commission.
- 15.2.2 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 15.3.1 Public Affairs, Ministry of Transport.
- 15.3.2 Supplied by respective provincial and territorial governments.
- 15.3.3 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 15.4 - 15.4.1 Public Affairs, Ministry of Transport; Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 15.4.2 Public Affairs, Ministry of Transport; National Harbours Board.
- 15.4.3 The St. Lawrence Seaway Authority.
- 15.4.4 - 15.5.1 Public Affairs, Ministry of Transport.
- 15.5.2 Canadian Transport Commission and the respective airlines.
- 15.5.3 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 15.6 Public Affairs, Ministry of Transport and the respective provincial governments.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

15.1 Net subsidies paid for maintenance of coastal and inland shipping services, year ended Mar. 31, 1974 (dollars)

Service	Amount paid
WEST COAST	
Gold River—Zeballos, BC	53,813
Vancouver—northern BC ports	753,000
Vancouver Island—Ahousat freight service	55,000
Vancouver Island—Kyuquot freight service	60,000
EAST COAST	
St. Barbe, Nfld.—Blanc-Sablon, Que.	197,500
Burnside—St. Brendan's, Nfld.	28,776
Carmanville—Fogo Island, Nfld.	78,334
Cobb's Arm—Change Islands, Nfld.	19,000
Dalhousie, NB—Miguasha, Que.	32,500
Grand Manan and the mainland, NB	259,000
Greenspond—Badger's Quay, Nfld.	36,000
Halifax, NS—St. John's, Nfld.	107,898
Montreal—Quebec—Rimouski—north shore ports, Que.	732,000
Owen Sound—Manitoulin Island, Ont.	21,373
Grindstone (Îles-de-la-Madeleine), Que.—Souris, PEI	580,000
Pelée Island and the mainland, Ont.	98,695
Pictou, NS—Charlottetown, PEI—Grindstone, Que.	74,104
Portugal Cove—Bell Island, Nfld.	517,000
Prince Edward Island—Newfoundland	111,289
Wood Island, PEI—Caribou, NS	1,859,493
Twillingate—New World Island, Nfld.	44,423
Montreal, Que.—Corner Brook—St. John's, Nfld.	2,124,932
Little Bay Islands—St. Patrick, Nfld.	22,917
Total	7,867,046

15.2 Railway track mileage operated, 1900-73

First main ¹ track mileage	Area and type of track	1969	1970	1971	1972	1973
1900	17,657					
1905	20,487					
1910	24,731					
1915	34,882					
1920	38,805					
1925	40,350					
1930	42,047					
1935	42,916					
1940	42,565					
1945	42,352					
1950 ²	42,979					
1955	43,444					
1960	44,029					
1965	43,157					
1970	43,983					
1971	44,153					
1972	44,025					
1973	44,232					
	First main	943	944	944	944	944
	Newfoundland	254	254	254	254	254
	Prince Edward Island	1,301	1,301	1,291	1,247	1,247
	Nova Scotia	1,665	1,665	1,665	1,665	1,665
	New Brunswick	5,329	5,329	5,329	5,324	5,409
	Quebec	10,045	10,038	9,935	9,876	9,876
	Ontario	4,746	4,746	4,746	4,743	4,743
	Manitoba	8,565	8,565	8,565	8,565	8,565
	Saskatchewan	5,950	6,245	6,245	6,228	6,227
	Alberta	4,289	4,370	4,653	4,653	4,776
	British Columbia	58	58	58	58	58
	Yukon Territory	129	129	129	129	129
	Northwest Territories	339	339	339	339	339
	United States					
	Total, first main	43,613	43,983	44,153	44,025	44,232
	All other	15,501	15,646	15,557	16,012	16,014
	Total	59,114	59,629	59,710	60,037	60,246

¹Defined as a single track extending the entire distance between terminals, upon which the length of the road is based.

²Newfoundland included from 1950.

15.3 Railway rolling-stock in service as at Dec. 31, 1972 and 1973

Type	1972	1973	Type	1972	1973
Locomotives	3,612	3,762	Freight cars	186,541	186,653
Steam	—	—	Automobile	2,607	2,579
Diesel-electric	3,598	3,748	Ballast	2,383	2,363
Electric	14	14	Box	97,162	95,239
Passenger cars	2,383	2,175	Flat	20,414	22,010
Turbo train			Gondola	20,450	20,464
Power unit cars	10	10	Hopper	25,539	26,365
Coach	20	20	Ore	7,241	7,371
Parlour	5	5	Refrigerator	5,292	4,955
Self-propelled cars	118	120	Stock	2,583	2,503
Coach	696	691	Tank	474	484
Combination	49	40	Other	2,396	2,320
Dining	99	95	Privately owned cars	18,074	17,708
Parlour	135	126	Tank	14,296	14,324
Sleeping	436	393	Other	3,778	3,384
Baggage, postal and express	808	668			
Other	7	7			

15.4 Commodities¹ hauled as revenue freight by railways, 1972 and 1973 (thousand tons)

Commodity	1972	1973	Commodity	1972	1973
LIVE ANIMALS	173	147	Gypsum	5,041	5,101
Cattle	155	131	Limestone	4,040	4,745
Other live animals	18	16	Other crude non-metallic minerals	16,543	19,159
FOOD, FEED, BEVERAGES AND TOBACCO	40,550	36,042	Waste materials	1,094	929
Meat, fresh or frozen	360	645	FABRICATED MATERIALS, INEDIBLE	66,993	70,538
Other animal products	265	252	Lumber	9,253	8,352
Barley	7,150	5,482	Other wood fabricated materials	2,083	2,150
Wheat	20,229	17,733	Wood pulp and other pulp	5,302	5,641
Other grains	2,638	2,345	Newsprint	5,667	5,579
Milled cereals and cereal products	2,077	1,861	Other paper and paperboard	2,986	3,168
Fruits and fruit preparations	651	662	Chemicals	5,317	5,898
Vegetables and vegetable preparations	1,574	1,551	Potash	6,353	7,989
Sugar	524	512	Other fertilizers	2,808	2,761
Other food and food preparations	1,462	1,275	Petroleum and coal products	13,036	14,302
Animal feed	2,541	2,586	Metals and primary metal products	8,158	8,345
Beverages	1,031	1,091	Cement	1,584	1,814
Tobacco and tobacco products	47	45	Other fabricated materials	4,447	4,541
CRUDE MATERIALS, INEDIBLE	111,575	138,217	END PRODUCTS, INEDIBLE	9,254	10,244
Crude animal and vegetable materials	2,981	2,811	Road motor vehicles and parts	5,309	5,883
Pulpwood	10,944	12,787	Other end products	3,945	4,361
Other crude wood materials	2,721	3,457	SPECIAL TYPES OF TRAFFIC	7,932	9,104
Textile fibres	135	150	Piggyback (trailer and container) ²	5,358	5,825
Iron ore	37,850	57,728	Freight forwarder	1,596	1,711
Nickel-copper ore	2,856	2,670	Other special traffic	979	1,568
Bauxite ore and alumina	2,774	2,606	NON-CARLOAD SHIPMENTS ³	1,433	1,654
Other metallic ores	8,232	8,107	Total	237,910	265,946
Scrap metal, slags and drosses	2,165	2,451			
Coal	14,011	15,191			
Crude oil and bituminous substances	190	325			

¹In this table duplications are eliminated, i.e. freight that is interlined between two or more Canadian railways is counted only once. The statistics do not cover United States operations of Canadian railways except for the Canadian Pacific Railway line through Maine, US, and certain other short mileages which are deemed to be an integral part of the Canadian railway system. Sections of United States railways operating into Canada are regarded as Canadian railways and are included. Freight carried by the Cartier Railway is included in this table; however, financial data for this railway are not available for inclusion in the financial tables.

²Excludes traffic moved in railway-operated containers and trailers.

³Includes express-rated traffic.

15.5 Capital invested in railway road and equipment property, 1969-73 (thousand dollars)

Investment	1969	1970	1971	1972	1973
Road	238,542	142,584	172,002	176,137	203,405
Equipment	44,643	43,599	11,654	Cr. 53,720	30,571
General	1,611	1,616	2,227	4,405	8,426
Undistributed ¹	Cr. 4,333	Cr. 24,901	16,600	Cr. 2,637	49,250
CNR non-rail property	4,021	3,889	5,312	5,379	14,989
CPR	Cr. 8,714	Cr. 21,955	Cr. 231	Cr. 16,189	27,003
Other	360	6,835	11,519	8,172	7,258
Total	280,463	162,897	202,483	124,185	291,652
Cumulative investment to Dec. 31	8,066,442	8,255,040	8,461,792	8,585,978	8,877,629
	8,092,143 ²	8,259,309 ³			

¹Credit entries in this table result when the annual "write-offs" are greater than the annual investment in any category.

²Restated to include Government of Ontario (GO) transit, not previously reported.

³Restated to reflect absorption of subsidiary operations into property accounts of one railway.

15.6 Capital structure of the Canadian National Railway System as at Dec. 31, 1969-73 (thousand dollars)

Year	Shareholders' capital		Funded debt held by public		Government loans and appropriations—active assets in public accounts	Total
	Government of Canada share-holders' account	Capital stock held by public	Guaranteed by federal and provincial governments	Other		
1969	1,950,991	4,345	1,049,990	2,024	846,788	3,854,138
1970	1,984,424	4,345	1,042,020	2,024	853,390	3,886,202
1971	2,023,540	4,345	816,276	2,024	1,078,195	3,924,380
1972	2,023,540	4,345	809,532	2,024	1,082,453	3,921,894
1973	2,023,540	4,345	803,474	2,024	1,088,898	3,922,281

15.7 Total operating revenues, operating expenses, net revenue, fixed charges and deficits of the Canadian National Railway System (Canadian and United States operations), 1969-73 (thousand dollars)

Year	Total operating revenue ^a	Total operating expenses	Income before fixed charges	Total fixed charges	Net income or deficit ¹	Cash deficit or surplus ²
1969	1,074,881	1,044,909	73,321	96,908	Dr. 23,587	Dr. 24,646
1970	1,109,139	1,079,596	68,387	98,735	" 30,348	" 29,709
1971	1,211,551	1,175,301	70,014	91,574	" 21,560	" 24,268
1972	1,334,047	1,293,081	76,476	90,177	" 13,701	" 17,822
1973	1,482,507	1,440,001	76,168	96,240	" 20,072	" 21,324

¹Includes appropriations for insurance fund.²Contributed by or paid to the Government of Canada.**15.8 Railway operating revenues and expenses (Canadian operations), 1969-73**

Item and year	Total revenues \$ '000	Total expenses (before fixed charges) \$ '000	Ratio of expenses to revenues %	Per mile of first main track			Freight revenue per freight-train mile \$
				Revenues \$	Expenses \$	Net revenues \$	
All railways							
1969	1,583,802	1,496,126	94.46	36,474	34,455	2,019	22.10
1970	1,679,759	1,573,579	93.68	38,357	35,932	2,425	22.91
1971	1,805,661	1,698,206	92.07	41,072	38,628	2,444	24.56
1972	1,940,594	1,842,575	93.24	44,079	41,853	2,226	25.33
1973	2,122,988	2,032,984	93.84	47,997	45,962	2,035	28.10
CNR							
1969	827,212	791,513	95.68	35,710	34,169	1,541	21.32
1970	852,178	807,986	94.81	36,317	34,434	1,883	22.06
1971	923,012	888,808	96.26	39,388	37,929	1,459	23.84
1972	1,017,510	988,813	97.13	43,614	42,384	1,230	25.71
1973	1,118,767	1,096,184	97.98	47,953	46,985	968	20.41
CPR							
1969	580,992	546,105	94.00	35,951	33,793	2,158	21.82
1970	616,846	578,262	93.75	38,230	35,839	2,391	22.33
1971	659,912	613,921	89.45	40,998	38,141	2,857	23.82
1972	711,168	653,184	87.55	44,195	40,592	3,603	25.60
1973	772,859	711,316	87.57	48,043	44,218	3,826	26.02

15.9 Road and street mileage classified by type and by province, 1971

Province or territory and jurisdiction	Surfaced		Gravel	Other	Earth	Total
	Rigid pavement	Flexible pavement				
FEDERAL AND PROVINCIAL JURISDICTION	2,602	76,161	190,425	4,198	42,435	315,821
Newfoundland	—	1,757	3,831	—	220	5,808
Prince Edward Island	833	822	985	—	611	3,251
Nova Scotia	6	5,159	10,406	—	76	15,647
New Brunswick	—	5,405	7,530	—	15	12,950
Quebec	232	16,500	24,098	—	13,386	54,216
Ontario	1,216	19,939	49,228	4,198	3,155	77,736
Manitoba	301	4,357	7,490	—	—	12,148
Saskatchewan	—	8,053	4,210	—	1,546	13,809
Alberta	6	6,501	64,681	—	17,049	88,237
British Columbia	8	7,638	14,696	—	6,377	28,719
Yukon Territory and Northwest Territories	—	30	3,270	—	—	3,300

15.9 Road and street mileage classified by type and by province, 1971 (concluded)

Province or territory and jurisdiction	Surfaced				Earth	Total
	Rigid pavement	Flexible pavement	Gravel	Other		
MUNICIPAL JURISDICTION	6,881	32,980	91,475	176	70,985	202,497
Newfoundland	7	470	627	2	31	1,137
Prince Edward Island	16	98	27	—	—	141
Nova Scotia	75	954	237	24	2	1,292
New Brunswick	50	828	114	6	19	1,017
Quebec	1,970	7,801	1,851	3	274	11,899
Ontario	2,686	11,552	6,013	43	565	20,859
Manitoba	1,258	540	20,380	37	12,812	35,027
Saskatchewan	195	1,590	56,658	—	56,374	114,817
Alberta	473	2,667	2,808	39	733	6,720
British Columbia	151	6,451	2,702	10	171	9,485
Yukon Territory and Northwest Territories	—	29	58	12	4	103

15.10 Construction, maintenance and administration expenditure on roads and streets, by province, years ended Mar. 31, 1972 and 1973 (thousand dollars)

Item and province or territory	Construction		Maintenance and administration		Total expenditure	
	1972	1973	1972	1973	1972	1973
EXPENDITURE ON PROVINCIAL AND FEDERAL ROADS^{1,2}	982,431^r	1,051,781	461,367^r	472,085	1,443,798^r	1,523,866
Newfoundland	38,426	37,915	17,052	19,534	55,478	57,449
Prince Edward Island	5,907	7,122	4,965	6,007	10,872	13,129
Nova Scotia	55,113	45,655	24,425	28,989	79,538	74,644
New Brunswick	38,168	44,445	28,267	29,898	66,435	74,343
Quebec	363,592	407,353	122,169	129,612	485,761	536,965
Ontario	212,137 ^r	183,912	159,838 ^r	153,406	371,975 ^r	337,318
Manitoba	29,294	41,079	19,850	21,013	49,144	62,092
Saskatchewan	52,331	47,016	18,485	16,646	70,816	63,662
Alberta	68,470	74,444	19,125	14,957	87,595	89,401
British Columbia	105,658	138,825	38,132	42,497	143,790	181,322
Yukon Territory and Northwest Territories	13,335 ^r	24,015	9,059 ^r	9,526	22,394 ^r	33,541
EXPENDITURE ON MUNICIPAL ROADS^{2,3}	501,797	556,936	565,500	614,702	1,067,297	1,171,638
Newfoundland	3,114	3,472	5,580	4,654	8,694	8,126
Prince Edward Island	280	400	690	741	970	1,141
Nova Scotia	6,493	11,304	8,488	9,038	14,981	20,342
New Brunswick	4,491	5,128	7,745	7,759	12,236	12,887
Quebec	70,813	89,059	136,984	147,726	207,797	236,785
Ontario	256,755	286,371	258,757	290,129	515,512	576,500
Manitoba	18,747	18,243	21,796	23,284	40,543	41,527
Saskatchewan	22,893	26,212	36,496	35,555	59,389	61,767
Alberta	72,170	68,957	53,448	56,070	125,618	125,027
British Columbia	45,502	47,018	34,826	38,830	80,328	85,848
Yukon Territory and Northwest Territories	539	772	690	916	1,229	1,688

¹Includes small amounts paid by private companies and other organizations in connection with railway grade crossings, overpasses, etc.

²Provincial and federal subsidies to municipalities amounted to \$327 million in 1971-72 and \$331 million in 1972-73 and should be added to provincial and federal expenditures and subtracted from municipal expenditures to arrive at net expenditures for the respective levels of government.

³Fiscal year for municipalities ends the previous Dec. 31.

15.11 Motor vehicles registered¹, by province, 1969-73

Province or territory	1969	1970	1971	1972	1973
Newfoundland	112,027	118,641	129,200	140,650	153,585
Prince Edward Island	38,812	40,233	42,691	45,430	49,141
Nova Scotia	314,547	269,815	310,383	304,028	325,871
New Brunswick	199,980	201,274	216,710	235,108	256,042
Quebec	1,998,001	2,115,126	2,279,722	2,589,351	2,718,424 ^a
Ontario	2,953,789	3,047,599	3,209,862	3,382,497	3,782,820 ^a
Manitoba	394,975	403,187	419,314	428,360	471,507
Saskatchewan	472,363	464,405	464,924	496,214	549,157 ^a
Alberta	735,729	768,759	813,395	864,397	952,625
British Columbia	1,014,301	1,046,697	1,115,028	1,191,953	1,281,917
Yukon Territory	11,855	11,371	11,796	11,621	11,194 ^a
Northwest Territories	7,781	8,474	9,111	11,158	12,845
Canada	8,254,160	8,495,581	9,022,136	9,700,767	10,565,128 ^a

¹Registrations given here include passenger cars, trucks, buses, motorcycles, service cars, etc., but not trailers or dealer licences.

^aIncludes snowmobiles.

15.12 Types of motor vehicles registered, by province, 1973

Province or territory	Passenger cars ¹	Commercial cars, trucks, etc. ²	Buses	Motor-cycles	Total
Newfoundland	115,444	34,714	1,062	2,365	153,585
Prince Edward Island	37,014	10,695	357	1,075	49,141
Nova Scotia	242,538	77,819	782	4,732	325,871
New Brunswick	198,671	50,057	1,304	6,010	256,042
Quebec	2,009,868	556,191	16,820	135,545	2,718,424
Ontario	3,002,091	704,332	14,197	62,200	3,782,820
Manitoba	355,175	108,549	305	7,478	471,507
Saskatchewan	304,885	233,569	4,086	6,617	549,157
Alberta	627,931	292,500	5,166	27,028	952,625
British Columbia	961,497	286,925	³	33,495	1,281,917
Yukon Territory	5,466	5,146	102	480	11,194
Northwest Territories	5,504	6,462	84	795	12,845
Canada	7,866,084	2,366,959	44,265	287,820	10,565,128

¹Includes taxis.²Includes service cars, road tractors, farm tractors, snowmobiles, etc.³Included with trucks.

15.13 Provincial revenue from the registration and operation of motor vehicles, by province, year ended Mar. 31, 1973 (dollars)

Province or territory	Passenger automobile licences	Truck, bus, trailer and other vehicle licences	Motor-cycle licences	Chauffeur, driver and dealer licences ¹	Public service vehicle tax	Motive fuel taxes	Total ²
Newfoundland	5,587,890	³	³	644,934	163,808	30,246,805	37,425,017
Prince Edward Island	1,110,099	602,947	4,092	130,643	72,690	7,609,676	9,815,520
Nova Scotia	7,729,263	6,780,809	⁴	1,067,275	342,370	50,734,977	68,494,907
New Brunswick	6,350,849	5,040,536	46,665	586,009	—	43,923,124	57,168,473
Quebec	66,975,145	48,753,235	1,355,450	13,586,571	4,682,189	372,994,540	513,443,320
Ontario	102,101,077	64,596,628	793,224	8,510,213	8,449,123	547,115,942	762,621,223
Manitoba	7,115,657	3,787,191	42,281	1,689,630	3,626,515	56,202,986	73,757,324
Saskatchewan	6,860,825	8,313,449	229,214	1,107,759	—	59,500,244	78,565,835
Alberta	12,660,430	15,950,181	³	2,440,911	329,457	100,932,435	136,878,132
British Columbia	49,793,684	³	³	³	703,633	130,912,999	181,444,708
Yukon Territory	112,905	371,793	1,435	107,015	88,834	2,866,466	3,685,051
Northwest Territories	493,252	³	³	37,216	—	2,376,400	2,908,351
Canada	266,891,096	154,196,769	2,472,361	29,908,176	18,458,619	1,405,416,594	1,926,207,861

¹Operator licences are issued for different periods in different provinces.²Includes other items not shown such as transfer of motor vehicles, garage and service station licences, and fines for infractions of motor vehicle laws.³Included with passenger automobiles.⁴Included with other vehicles.

15.14 Sales of motive fuels, by province, 1969-73 (thousand gallons)

Province or territory	1969	1970	1971 ¹	1972 ¹	1973 ¹
Gasoline and liquefied petroleum gases					
Newfoundland	76,961	84,127	92,432	102,301	123,096
Prince Edward Island	27,979	29,980	31,458	33,456	36,863
Nova Scotia	176,437	187,246	196,023	208,604	227,772
New Brunswick	154,164	166,477	172,391	188,767	206,029
Quebec	1,318,121	1,386,548	1,444,404	1,538,091	1,661,851
Ontario	2,079,405	2,160,216	2,223,775	2,387,928	2,560,787
Manitoba	270,971	283,629	284,915	303,402	324,128
Saskatchewan	346,460	341,941	354,574	359,758	380,933
Alberta	551,733	578,914	596,300	634,227	687,511
British Columbia	598,328	634,220	675,806	719,159	794,603
Yukon Territory	}	16,778	19,377	10,116	10,614
Northwest Territories				7,724	9,188
Total, gross sales	5,617,336	5,872,674	6,089,919	6,495,215	7,023,375

15.14 Sales of motive fuels, by province, 1969-73 (thousand gallons) (concluded)

Province or territory	1969	1970	1971 ¹	1972 ¹	1973 ¹
Refunds and exemptions	589,072	584,819	574,590	573,656	613,887
Total, net sales	5,028,264	5,287,854	5,515,329	5,921,559	6,409,488
Diesel oil					
Total, net sales	388,116	467,955	549,780	706,638	858,127

¹Excludes liquefied petroleum gases.**15.15 Summary statistics of intercity and rural passenger bus companies, 1972**

Province	Firms No.	Revenue earned (\$'000)		Total
		Passenger	Other	
Newfoundland	21	1,529	8	1,537
Nova Scotia	10	1,695	99	1,794
New Brunswick	10	2,310	159	2,469
Quebec	45	19,552	4,258	23,810
Ontario	28	35,561	3,088	38,649
Manitoba	4	2,841	428	3,269
Saskatchewan	7	3,727	107	3,834
Alberta ¹	7	28,798	358	29,156
British Columbia	25	4,061	99	4,160
Total	157	100,074	8,604	108,678

¹Northwest Territories grouped with Alberta to meet confidentiality requirements.**15.16 Summary statistics of motor carriers — freight, 1972**

Carriers reporting	No.	14,237	Equipment operated (concluded)		
Operating revenues	\$'000,000	2,229.5	Tractors	No.	35,701
Equipment operated			Trailers	"	59,813
Straight trucks	No.	46,853	Other	"	5,671

15.17 Vessels entered at Canadian ports, 1969-73

Year	In international seaborne shipping		In coastwise shipping		Total	
	Vessels	Registered net tons	Vessels	Registered net tons	Vessels	Registered net tons
1969	25,082	98,632,758	88,543	93,883,371	113,625	192,516,129
1970	25,384	108,575,133	80,331	100,935,295	105,715	209,510,428
1971	24,970	114,252,881	68,083	96,274,780	93,053	210,527,661
1972	24,771	121,535,914	63,438	92,675,867	88,209	214,211,781
1973	23,258	121,419,102	58,759	90,799,809	82,017	212,218,911

15.18 Cargoes loaded and unloaded at principal Canadian ports¹ from vessels in international seaborne and coastwise shipping, by province, 1973 with total for 1972 (tons)

Province and port	International		Coastwise		Total 1973P	Total 1972
	Loaded	Unloaded	Loaded	Unloaded		
NEWFOUNDLAND	<i>1,655,579</i>	<i>2,263,286</i>	<i>1,377,597</i>	<i>3,011,088</i>	<i>8,307,550</i>	<i>7,162,634</i>
St. John's	46,617	52,234	175,814	931,847	1,206,512	1,150,430
Stephenville	701,286	—	140,667	298,398	1,140,351	1,114,073
Holyrood	27,409	600,769	392,370	95,342	1,115,890	1,013,341
Corner Brook	341,847	160,786	24,309	310,543	837,485	758,839
Botwood	345,953	123,350	—	114,181	583,484	578,535
Port aux Basques	3,655	625	76,836	463,627	544,743	522,836
PRINCE EDWARD ISLAND	<i>35,563</i>	<i>26,087</i>	<i>102,433</i>	<i>634,761</i>	<i>798,844</i>	<i>652,710</i>
Charlottetown	1,443	22,978	86,354	607,609	718,384	560,611
NOVA SCOTIA	<i>10,405,709</i>	<i>11,242,940</i>	<i>5,110,839</i>	<i>2,463,651</i>	<i>29,223,139</i>	<i>26,744,611</i>
Halifax	3,985,414	6,187,527	2,752,404	778,996	13,704,341	11,715,936
Port Hawkesbury	3,650,030	4,925,530	1,140,789	140,164	9,856,513	9,226,101
Hantsport	1,624,419	1	—	—	1,624,420	1,763,148
Sydney	30,367	69,463	37,852	1,186,795	1,324,477	1,484,222
Little Narrows	799,350	2,500	362,563	—	1,164,413	1,164,959
North Sydney	11,197	522	464,157	78,013	553,889	543,442
NEW BRUNSWICK	<i>3,855,405</i>	<i>7,737,517</i>	<i>2,102,455</i>	<i>1,150,469</i>	<i>14,845,846</i>	<i>12,870,815</i>
Saint John	2,767,693	7,236,043	2,054,843	129,121	12,187,700	10,317,946
Dalhousie	604,876	105,735	8,963	263,287	982,861	961,172
Newcastle	290,699	—	392	309,687	600,778	536,640
QUEBEC	<i>58,546,118</i>	<i>22,785,362</i>	<i>13,079,265</i>	<i>20,684,425</i>	<i>115,095,170</i>	<i>102,296,192</i>
Sept-Îles-Pointe-Noire	24,080,193	626,501	3,618,765	731,635	29,057,094	22,324,275
Montreal	6,151,237	5,200,447	4,486,533	5,341,104	21,179,321	25,513,866
Port-Cartier	13,166,755	2,224,101	24,367	1,815,112	17,230,335	15,088,396
Quebec	5,364,537	6,304,808	1,117,169	3,136,373	15,922,887	14,835,128
Baie-Comeau	3,990,927	1,902,890	171,289	2,315,597	8,380,703	7,826,422
Sorel	2,326,221	1,135,478	19,852	2,776,424	6,257,975	6,266,115
Port-Alfred	404,181	3,307,818	26,673	382,382	4,121,054	4,512,744
Trois-Rivières	1,334,299	819,079	75,755	1,708,792	3,937,925	3,943,035
Havre-Saint-Pierre	676,712	—	2,232,107	26,780	2,935,599	1,991,346
Contrecoeur	729,497	1,118,283	348,439	308,888	2,505,107	1,346,849
Chicoutimi	—	35,278	2,944	668,870	707,092	729,405
Forestville	—	—	370,440	35,967	406,407	833,175
ONTARIO	<i>10,981,695</i>	<i>23,518,185</i>	<i>24,466,090</i>	<i>18,217,858</i>	<i>77,183,828</i>	<i>80,007,271</i>
Thunder Bay	4,033,164	262,708	14,977,610	843,613	20,117,095	23,094,400
Hamilton	190,419	7,332,854	268,621	5,295,550	13,087,444	12,680,988
Sarnia	689,359	3,843,875	2,712,467	613,575	7,859,276	8,085,540
Sault Ste Marie	102,489	3,460,760	234,478	1,834,088	5,631,815	4,916,853
Toronto	200,644	1,500,006	213,789	1,444,688	3,359,127	4,267,927
Clarkson	279,500	43,005	510,317	2,371,477	3,204,299	2,527,001
Windsor—Walkerville	808,562	788,021	825,594	750,832	3,173,009	2,626,066
Port Colborne	1,466,460	261,625	75,022	617,033	2,420,140	2,230,066
Colborne	13,725	—	2,222,878	—	2,236,603	2,042,550
Pictou	958,402	117,684	298,452	60,148	1,434,686	1,282,360
Goderich	357,856	37,727	670,419	336,972	1,402,974	1,529,043
Lakeview (Port Credit)	—	812,538	205,613	6,840	1,024,991	3,796,355
Depot Harbour	811,024	—	—	—	811,024	762,895
Little Current	590,615	110,553	59,984	42,469	803,621	948,349
Midland	—	36,890	—	625,727	662,617	829,563
Prescott	—	117,381	51,943	385,883	555,207	586,418
Michipicoten Harbour	—	282,165	185,603	48,377	516,145	528,510
Kingston	45,686	93,624	47,876	321,561	508,747	560,898
Parry Sound	—	39,017	—	454,007	493,024	561,157
MANITOBA	<i>521,783</i>	<i>29,601</i>	<i>6,567</i>	<i>6,521</i>	<i>564,472</i>	<i>776,310</i>
Churchill	521,783	29,601	6,000	6,521	563,905	776,310
BRITISH COLUMBIA	<i>38,543,379</i>	<i>5,910,426</i>	<i>14,943,266</i>	<i>14,930,071</i>	<i>74,327,142</i>	<i>68,802,452</i>
Vancouver ²	27,200,884	3,913,455	3,031,598	4,979,190	39,125,127	34,897,731
New Westminster	750,979	412,152	1,183,884	1,192,750	3,539,765	3,020,225
Nanaimo	1,440,696	79,253	83,316	613,174	2,216,439	2,048,737
Duncan Bay—Campbell River	598,873	152,791	175,089	1,208,761	2,135,514	2,278,401
Britannia Beach	50,581	6,470	1,970,406	79,495	2,106,952	1,730,515
Victoria	1,157,568	189,099	259,848	439,092	2,045,607	2,509,214
Powell River	384,976	110,421	543,779	794,154	1,833,330	1,780,817
Crofton	884,428	29,551	49,134	761,748	1,724,861	1,690,811
Kitimat	425,907	684,805	377,568	43,904	1,532,184	1,353,657
Prince Rupert	1,011,329	16,774	83,447	255,706	1,367,256	1,559,560
Port Alberni	883,658	68,883	27,107	331,812	1,311,460	1,263,380
Tasu	1,010,879	—	—	9,668	1,020,547	675,127
Ladysmith	19,100	5,590	733,334	38,702	796,726	755,917
Chemainus	322,022	9,211	221,725	69,211	622,169	599,634
Vanguard	—	—	286,059	290,598	576,657	619,071
Quatsino	57,437	84,329	291,481	132,530	565,777	729,726
Marble Bay	392,325	—	121,547	1,000	514,872	691,059
Blubber Bay	299,969	—	82,367	172	382,508	527,352
NORTHWEST TERRITORIES	—	—	<i>3,343</i>	<i>93,011</i>	<i>96,354</i>	<i>136,545</i>
Total	124,545,231	73,513,404	61,191,855	61,191,855	320,442,345	299,449,540

¹Only ports handling over 500,000 tons are listed.

²Includes Roberts Bank.

15.19 Principal commodities¹ in water-borne cargo loaded and unloaded at ports handling the largest tonnages in 1973 (tons)

Port and commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
VANCOUVER ²	27,200,884	3,913,455	3,031,598	4,979,190	39,125,127
Coal, bituminous	10,015,652	—	4	—	10,015,656
Wheat	5,673,838	—	—	—	5,673,838
Sand and gravel	34,015	643,853	340	2,611,007	3,289,215
Sulphur in ores	2,259,757	—	16,724	—	2,276,481
Lumber and timber	1,305,933	21,431	292,426	271,626	1,891,416
Potash	1,431,932	424	370	—	1,432,726
Logs	17,257	2,890	49,720	1,228,940	1,298,807
Barley	1,245,717	—	—	—	1,245,717
Fuel oil	190,401	202,752	846,946	—	1,240,099
Pulpwood	214,579	19,039	715,990	53,384	1,002,992
Rapeseed	946,743	—	—	—	946,743
Containerized freight	353,008	408,090	—	—	761,098
Salt	400	428,487	24,037	—	452,924
Gasoline	44,202	—	318,413	—	362,615
Pulp	161,049	—	11,600	137,952	310,601
Cement	96,964	32,570	4,104	168,555	302,193
Newsprint	36,003	—	115	251,059	287,177
Inorganic chemicals	27,293	14,559	235,167	1,385	278,404
Limestone	73,981	9,400	3,400	178,153	264,934
Flaxseed	199,202	—	—	—	199,202
Asbestos	97,915	89	12	—	98,016
Waste and scrap, n.e.s.	7,186	3,109	75,223	11,807	97,325
Building paper and board	1,377	284	93,616	927	96,204
Passenger autos and chassis	3,053	30,638	118	16	33,825
Fertilizers, n.e.s.	24,378	1,064	2,858	30	28,330
Other commodities not listed	2,739,049	2,094,776	340,415	64,349	5,238,589
SEPT ÎLES-POINTE-NOIRE	24,080,193	626,501	947,700	556,846	26,211,240
Iron ore and concentrates	24,053,897	—	926,830	—	24,980,727
Fuel oil	—	388,554	43	247,599	636,196
Bentonite	—	146,224	—	16,130	162,354
Other commodities not listed	26,296	91,723	20,827	293,117	431,963
MONTREAL	6,151,237	5,200,447	4,486,533	5,341,104	21,179,321
Fuel oil	1,010,184	1,631,234	2,693,559	329,882	5,664,859
Wheat	1,930,209	164,082	—	—	2,094,291
Containerized freight	1,008,908	722,154	—	—	1,731,062
Gasoline	52,602	—	985,332	72,700	1,110,634
Crude petroleum	—	200,680	—	573,331	774,011
Salt	22	259,482	—	366,498	626,002
Cement	490,716	—	85,499	—	576,215
Gypsum	105	—	24,036	463,803	487,944
Raw sugar	—	413,884	—	—	413,884
Barley	323,218	12,019	—	—	335,237
Corn	36,906	252,010	—	—	288,916
Organic chemicals, n.e.s.	164,369	81,766	17,284	3,202	266,621
Coal, bituminous	—	225,701	—	—	225,701
Petroleum and coal products, n.e.s.	17,496	51,370	68,180	79,214	216,260
Structural shapes	21,611	132,540	44,991	2,431	201,573
Lubricating oil and grease	153	4	163,154	76	163,387
Machinery, n.e.s.	60,882	22,075	51,569	10,819	145,345
Manganese ore	—	101,152	8,821	—	109,973
Plate and sheet steel	31,758	63,602	14,494	4	109,858
Molasses, crude	—	90,661	—	—	90,661
Bars and rods, steel	17,231	43,007	3,657	—	63,895
Other commodities not listed	984,867	733,024	325,957	3,439,144	5,482,992
THUNDER BAY	4,033,164	262,708	14,977,610	843,613	20,117,095
Wheat	77,052	—	8,706,883	—	8,783,935
Iron ore and concentrates	2,516,058	—	3,187,712	—	5,703,770
Barley	289,619	—	2,359,242	—	2,648,861
Oats	22,483	—	355,865	—	378,348
Rapeseed	300,967	—	28,516	—	329,483
Flaxseed	259,069	—	66,960	—	326,029
Fuel oil	—	—	—	247,254	247,254
Gasoline	—	—	—	208,870	208,870
Hulls, screenings and chaff	123,447	—	82,618	—	206,065
Newsprint	156,094	—	6,589	—	162,683
Rye	37,782	—	46,782	—	84,564
Concentrated and complete feeds	40,223	—	4,086	473	44,782
Other commodities not listed	210,370	262,708	132,357	387,016	992,451
PORT-CARTIER	13,166,755	2,224,101	24,367	1,815,112	17,230,335
Iron ore and concentrates	9,663,477	—	10,008	—	9,673,485
Wheat	2,187,500	993,233	11,646	1,381,051	4,573,430
Corn	769,596	847,646	—	—	1,617,242
Barley	501,319	169,078	—	332,119	1,002,516
Fuel oil	504	134,280	—	51,067	185,851
Other commodities not listed	44,359	79,864	2,713	50,875	177,811
QUEBEC	5,364,537	6,304,808	1,117,169	3,136,373	15,922,887
Crude petroleum	—	4,345,112	—	94,075	4,439,187
Fuel oil	1,431,309	576,549	824,656	722,607	3,555,121
Wheat	861,188	252,056	—	689,902	1,803,146
Barley	729,708	275,665	—	401,623	1,406,996
Containerized freight	477,965	449,030	—	—	926,995
Gasoline	154,060	—	242,537	499,914	896,511

15.19 Principal commodities¹ in water-borne cargo loaded and unloaded at ports handling the largest tonnages in 1973 (tons) (continued)

Port and commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
QUEBEC (concluded)					
Zinc ore and concentrates	702,038	—	—	16,446	718,484
Pulpwood	—	—	—	396,940	396,940
Corn	91,583	227,306	—	7,034	325,923
Cement	253,025	—	9,274	—	262,299
Newsprint	166,974	—	—	—	166,974
Salt	—	14,850	—	135,790	150,640
Asbestos	19,855	—	—	—	19,855
Other commodities not listed	476,832	164,240	40,702	172,042	853,816
HALIFAX	3,985,414	6,187,527	2,752,404	778,996	13,704,341
Crude petroleum	—	5,145,436	—	—	5,145,436
Gypsum	2,484,254	—	140,933	—	2,625,187
Fuel oil	74,903	204,079	1,836,113	431,938	2,547,033
Containerized freight	704,359	657,441	—	55	1,361,855
Gasoline	93,134	2,892	730,416	165,274	991,716
Wheat	413,138	—	—	131,095	544,233
Other commodities not listed	215,626	177,679	44,942	50,634	488,881
HAMILTON	190,419	7,332,854	268,621	5,295,550	13,087,444
Iron ore and concentrates	—	2,035,131	—	4,615,430	6,650,561
Coal, bituminous	—	4,601,964	—	6,682	4,608,646
Fuel oil	15,468	76,719	11,177	286,279	389,643
Plate and sheet steel	82,890	36,862	95,875	—	215,627
Sand and gravel	—	155,570	—	20	155,590
Soya beans	3,000	104,731	—	—	107,731
Gasoline	—	—	—	67,238	67,238
Other commodities not listed	89,061	321,877	161,569	319,901	892,408
SAINT JOHN	2,767,693	7,236,043	2,054,843	129,121	12,187,700
Crude petroleum	414,971	6,206,717	—	—	6,621,688
Fuel oil	444,714	340,418	1,599,094	55,966	2,440,192
Gasoline	149,073	—	414,083	70,585	633,741
Wheat	455,715	—	—	—	455,715
Containerized freight	259,648	166,360	—	—	426,008
Raw sugar	—	261,083	—	—	261,083
Pulp	244,899	4,324	—	—	249,223
Wheat flour	190,417	—	—	—	190,417
Newsprint	184,963	—	—	—	184,963
Other commodities not listed	423,293	257,141	41,666	2,570	724,670
PORT HAWKESBURY	3,650,030	4,925,530	1,140,789	140,164	9,856,513
Crude petroleum	380,064	4,699,808	—	—	5,079,872
Fuel oil	2,264,012	107,795	886,492	140,164	3,398,463
Gypsum	760,250	—	—	—	760,250
Petroleum and coal products, n.e.s.	186,817	—	40,991	—	227,808
Gasoline	—	7,590	213,306	—	220,896
Other commodities not listed	58,887	110,337	—	—	169,224
BAIE-COMEAU	3,990,927	1,902,890	171,289	2,315,597	8,380,703
Wheat	2,534,391	924,535	—	1,510,447	4,969,373
Barley	607,253	176,708	—	470,910	1,254,871
Newsprint	454,059	—	2,000	—	456,059
Alumina and bauxite ores	—	305,591	—	—	305,591
Fuel oil	—	96,038	13,858	170,847	280,743
Corn	130,262	137,629	—	—	267,891
Soya beans	102,658	103,066	—	—	205,724
Pulpwood	9,200	—	81,190	—	90,390
Other commodities not listed	153,104	159,323	74,241	163,393	550,061
SARNIA	689,359	3,843,875	2,712,467	613,575	7,859,276
Coal, bituminous	—	2,904,251	—	—	2,904,251
Fuel oil	527,452	66,036	1,298,438	178,648	2,070,574
Gasoline	24,692	—	932,016	—	956,708
Limestone	6,734	574,367	—	—	581,101
Wheat	—	—	89,178	178,334	267,512
Petroleum coal products	4,785	56,090	26,480	71,514	158,869
Inorganic chemicals, n.e.s.	—	—	157,014	—	157,014
Lubricating oil and grease	—	9,282	5,915	140,989	156,186
Organic chemicals, n.e.s.	—	—	—	14,716	14,716
Other commodities not listed	125,696	233,849	203,426	29,374	592,345
SOREL	2,326,221	1,135,478	19,852	2,776,424	6,257,975
Titanium ore	25,300	—	—	2,195,322	2,220,622
Wheat	468,260	149,495	—	367,072	984,827
Slag, drosses, by-products	795,181	—	4,004	—	799,185
Pig iron	438,293	—	4,483	—	442,776
Coal, n.e.s.	—	408,426	—	—	408,426
Barley	137,556	—	—	146,988	284,544
Phosphate rock	—	36,848	—	—	36,848
Fuel oil	—	—	5,240	31,025	36,265
Other commodities not listed	461,631	540,709	6,125	36,017	1,044,482
SAULT STE MARIE	102,489	3,460,760	234,478	1,834,088	5,631,815
Coal, bituminous	—	2,371,210	—	—	2,371,210
Iron ore and concentrates	—	332,961	—	1,450,522	1,783,483
Limestone	—	640,053	—	—	640,053
Fuel oil	—	10,503	10,413	235,251	256,167
Plate and sheet steel	38,261	2,595	166,087	—	206,943
Gasoline	—	—	—	131,980	131,980
Other commodities not listed	64,228	103,438	57,978	16,335	241,979

15.19 Principal commodities¹ in water-borne cargo loaded and unloaded at ports handling the largest tonnages in 1973 (tons) (concluded)

Port and commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
PORT-ALFRED	404,181	3,307,818	26,673	382,382	4,121,054
Alumina and bauxite ores	185	2,413,537	609	—	2,414,331
Fuel oil	—	399,782	—	—	399,782
Coke	—	276,046	—	—	276,046
Newsprint	189,743	—	—	—	189,743
Fluorspar	—	33,683	—	150,786	184,469
Inorganic chemicals, n.e.s.	2,349	96,865	16,034	38,949	154,197
Pulpwood	—	—	—	117,510	117,510
Aluminum	109,198	2,367	—	—	111,565
Other commodities not listed	102,706	85,538	10,030	75,137	273,411
TROIS-RIVIÈRES	1,334,299	819,079	75,755	1,708,792	3,937,925
Wheat	627,281	25,501	54,543	652,065	1,359,390
Fuel oil	67,669	276,455	16,885	360,946	721,955
Barley	191,418	29,012	2,680	206,446	429,556
Pulpwood	—	—	950	255,810	256,760
Newsprint	131,609	—	—	—	131,609
Salt	—	—	—	115,542	115,542
Other commodities not listed	316,322	488,111	697	117,983	923,113
NEW WESTMINSTER	750,979	412,152	1,183,884	1,192,750	3,539,765
Sand and gravel	—	—	974,989	418,464	1,393,453
Logs	937	3,750	5,920	452,567	463,174
Pulpwood	174,648	—	159,450	680	334,778
Lumber and timber	156,996	—	18,980	36,146	212,122
Cement	11,810	6,000	—	160,014	177,824
Waste and scrap, n.e.s.	9,231	—	14,200	1,590	25,021
Other commodities not listed	397,357	402,402	10,345	123,289	933,393
TORONTO	200,644	1,500,006	213,789	1,444,688	3,359,127
Fuel oil	37,235	128,620	102,051	407,256	675,162
Coal, bituminous	—	590,728	—	—	590,728
Cement	31,012	—	4,500	310,635	346,147
Wheat	—	—	—	245,870	245,870
Salt	—	36,590	—	160,802	197,392
Raw sugar	—	185,146	—	3,360	188,506
Soya beans	—	137,891	—	11,215	149,106
Barley	3,629	3,600	—	119,879	127,108
Other commodities not listed	128,768	417,431	107,238	185,671	839,108
LAKEVIEW (PORT CREDIT)	55,169	2,335,383	205,613	6,840	2,603,005
Coal, bituminous	—	2,335,383	27,895	—	2,363,278
Other commodities not listed	55,169	—	177,718	6,840	239,727

¹Only commodities totalling over 100,000 tons are listed.²Includes Roberts Bank.**15.20 Vessels and tonnage handled by harbours administered by the National Harbours Board, 1973 and 1974**

Port or elevator and year		Vessel arrivals	Vessel tonnage (gross)	Cargo tonnage	Grain elevator shipments <i>bu</i>
St. John's, Nfld.	1973	1,912	3,976,000	1,153,335	...
	1974	1,834	3,941,000	1,125,160	...
Halifax	1973	2,518	17,146,643	14,062,771	17,334,025
	1974	2,250	16,724,613	13,875,240	17,390,822
Saint John	1973	1,879	14,080,848	6,160,078	14,887,492
	1974	1,840	14,039,081	5,899,426	10,115,286
Belledune, NB	1973	44	420,588	572,639	...
	1974	68	572,758	714,422	...
Sept Îles	1973	1,548	20,508,248	30,481,894	...
	1974	1,391	18,873,000	30,539,196	...
Chicoutimi	1973	160	473,152	685,842	...
	1974	143	467,863	655,303	...
Baie-des-Ha! Ha!	1973	571	3,412,000	4,284,000	...
	1974	507	3,582,619	4,664,336	...
Quebec	1973	2,086	14,412,000	16,675,221	89,037,781
	1974	1,740	11,864,000	13,929,997	81,108,845
Trois-Rivières	1973	905	4,552,000	4,150,184	45,084,410
	1974	948	3,863,000	3,639,778	35,535,397
Montreal	1973	5,119	39,316,000	23,918,844	147,850,548
	1974	3,931	31,917,543	23,842,036	145,194,693
Prescott	1973	63	512,652	501,697	12,552,684
	1974	59	457,000	401,471	11,941,078
Port Colborne	1973	25	136,499	141,856	4,872,129
	1974	16	107,165	113,404	5,185,207
Churchill	1973 ²	57	445,796	577,682	19,546,855
	1974	83	535,478	669,818	23,277,345
Vancouver	1973	17,948	46,770,640	42,089,028	291,152,333
	1974	16,749	58,664,628	41,899,851	195,532,194
Prince Rupert	1973	1,236	2,773,000	1,868,122	24,105,381
	1974	1,641	3,317,000	1,712,603	26,324,741
Total	1973	36,071	168,936,066	147,323,193	666,423,638
	1974	33,200	168,926,748	143,692,041	551,605,608

15.21 Summary statistics of St. Lawrence Seaway traffic¹, 1973 and 1974

Item	Upbound		1974		Downbound		1974	
	1973		1973		1973		1973	
	No. of transits	Cargo tons	No. of transits	Cargo tons	No. of transits	Cargo tons	No. of transits	Cargo tons
Type of vessel								
Ocean								
Cargo	1,087	6,050,237	644	5,029,689	1,092	11,104,685	640	6,143,421
Tanker	59	535,783	45	307,735	59	292,174	44	295,082
Inland								
Cargo	1,877	19,183,081	1,630	17,733,997	1,858	31,643,208	1,615	25,372,979
Tug and barge	117	876,695	75	603,953	133	200,803	86	189,614
Tanker	634	3,008,562	452	1,736,747	645	1,339,853	451	1,860,136
Coastal								
Cargo	45	356,369	46	291,273	49	256,275	54	220,595
Tug and barge	42	80,215	27	75,277	21	25,452	33	58,245
Tanker	16	171,458	17	125,564	16	44,198	19	92,260
Non-cargo								
Tug and barge	147	—	154	—	84	—	114	—
All other ²	136	—	92	—	167	—	111	—
Total	4,160	30,262,400	3,182	25,904,235	4,124	44,906,648	3,167	34,232,332
Type of cargo								
Bulk	1,917	25,071,048	1,529	22,077,770	2,739	43,440,959	2,082	33,154,274
General	562	4,668,381	402	3,469,572	117	358,634	109	504,586
Mixed	129	522,971	73	356,893	210	1,107,055	133	573,472
Passengers	3	—	12	—	9	—	12	—
In ballast								
Ocean	338	—	83	—	85	—	59	—
Laker	915	—	817	—	700	—	525	—
Coastal	16	—	22	—	22	—	26	—
Other	280	—	244	—	242	—	221	—
Type of traffic								
Domestic								
Canada to Canada	1,265	7,328,311	1,146	6,585,862	1,596	15,415,184	1,353	14,130,357
Canada to United States	1,607	16,091,917	1,240	13,730,485	19	62,270	25	105,130
United States to Canada	21	90,552	18	46,789	1,233	17,674,934	995	13,259,575
United States to United States	124	169,208	89	203,675	125	357,401	110	298,767
Foreign								
Canada								
Import	198	890,908	129	590,283	—	—	—	—
Export	—	—	—	—	229	1,316,777	185	1,418,471
United States								
Import	945	5,691,504	560	4,747,141	—	—	—	—
Export	—	—	—	—	922	10,080,082	499	5,020,032

¹Combined traffic of the Montreal-Lake Ontario section and the Welland Canal, with duplications eliminated.²Includes naval vessels.15.22 St. Lawrence Seaway traffic¹ classified by type of cargo, 1973 and 1974

Commodity	1973		1974	
	Cargo tons	% of total	Cargo tons	% of total
AGRICULTURAL PRODUCTS	25,891,382	34.4	18,136,200	30.1
Wheat	12,006,117	15.9	9,508,375	15.8
Corn	4,179,795	5.6	3,091,690	5.1
Rye	730,334	1.0	355,382	0.6
Oats	942,022	1.3	502,149	0.8
Barley	3,822,337	5.0	1,919,609	3.2
Flour, wheat	38,760	0.1	37,268	0.1
Flour, edible, other	23,903	—	15,180	—
Soya beans	1,967,480	2.6	1,423,723	2.4
Soya bean oil, cake and meal	400,951	0.5	248,144	0.4
Beans and peas	41,216	0.1	94,208	0.2
Malt	115,237	0.2	88,550	0.1
Flaxseed	314,892	0.4	222,051	0.4
Other agricultural products	1,308,338	1.7	629,871	1.0
ANIMAL PRODUCTS	287,550	0.4	254,385	0.4
Packing house products, edible	133,359	0.2	77,768	0.1
Hides, skins and pelts	34,815	—	60,319	0.1
Other animal products	119,376	0.2	116,298	0.2
MINERAL PRODUCTS	34,227,596	45.6	31,366,785	52.2
Bituminous coal	8,139,388	10.8	6,486,199	10.8
Coke	845,095	1.1	1,349,390	2.2
Iron ore	19,996,621	26.7	17,839,226	29.7
Aluminum ore and concentrates	107,648	0.1	16,570	—
Clay and bentonite	216,130	0.3	290,850	0.5
Gravel and sand	38,411	0.1	113,201	0.2
Stone, ground or crushed	1,367,833	1.8	1,457,026	2.4
Stone, rough	14,094	—	5,674	—
Petroleum, crude	799,782	1.1	1,239,629	2.1
Salt	1,538,048	2.0	1,549,689	2.6

15.22 St. Lawrence Seaway traffic¹ classified by type of cargo, 1973 and 1974 (concluded)

Commodity	1973 Cargo tons	% of total	1974 Cargo tons	% of total
MINERAL PRODUCTS (concluded)				
Phosphate rock	40,812	0.1	—	—
Sulphur	—	—	84,571	0.1
Other mineral products	1,123,734	1.5	934,760	1.6
FOREST PRODUCTS				
Pulpwood	187,077	0.2	103,255	0.2
Other forest products	60,399	0.1	—	—
	126,678	0.1	103,255	0.2
MANUFACTURES AND MISCELLANEOUS				
Gasoline	14,347,359	19.1	10,080,198	16.8
Fuel oil	321,135	0.4	279,137	0.5
Lubricating oils and greases	4,241,314	5.7	2,656,394	4.4
Petroleum products, other	156,876	0.2	208,855	0.3
Rubber, crude, natural and synthetic	84,743	0.1	155,375	0.3
Chemicals	50,168	0.1	19,540	--
Sodium products	466,017	0.6	401,938	0.7
Tar, pitch and creosote	160,440	0.2	126,773	0.2
Pig iron	72,146	0.1	87,674	0.1
Iron and steel, bars, rods, slabs	151,623	0.2	135,223	0.2
Iron and steel, nails, wire	509,908	0.7	545,736	0.9
Iron and steel, manufactured	130,201	0.2	67,682	0.1
Machinery and machines	3,723,202	5.0	2,993,365	5.0
Cement	94,243	0.1	66,515	0.1
Wood pulp	247,781	0.3	280,532	0.5
Newsprint	58,192	0.1	15,389	--
Syrup and molasses	126,745	0.1	56,719	0.1
Sugar	72,040	0.1	51,399	0.1
Food products	285,394	0.4	224,351	0.4
Scrap iron and steel	162,311	0.2	63,221	0.1
Other manufactures and miscellaneous	935,078	1.2	136,749	0.2
	2,297,802	3.1	1,507,631	2.6
PACKAGE FREIGHT				
Domestic	228,084	0.3	195,744	0.3
Foreign	228,077	0.3	195,744	0.3
	7	--	—	—
Total	75,169,048	100.0	60,136,567	100.0

¹Combined traffic of the Montreal - Lake Ontario section and the Welland Canal, with duplications eliminated.

15.23 St. Lawrence Seaway Authority expenditure, 1972-74 (dollars)

Item	1972	1973	1974
Administration			
Headquarters	5,070,476	5,907,909	6,071,519
Regional	2,061,483	2,383,916	2,672,745
Operation and maintenance			
Salaries and wages	10,042,159	10,530,586	11,897,877
Employee benefits	1,121,412	1,296,388	1,477,297
Maintenance materials and services	4,510,781	5,588,528	7,041,428
Grants in lieu of municipal taxes	735,215	799,615	785,431
Other operation and maintenance expenses	837,432	1,068,812	1,414,820
Total	24,378,958	27,575,754	31,361,117

15.24 Aircraft movements by class of operation at airports with Ministry of Transport air traffic control towers, 1970-74

Operation	1970	1971	1972	1973	1974
Local operations ¹	2,373,806	2,736,404	2,710,601	2,667,345	3,153,170
Itinerant operations ²	1,889,693	1,999,938	2,234,754	2,586,625	2,539,541
Simulated approaches ³	111,870	159,034	—	—	—
Total, movements	4,375,369	4,895,376	4,945,355	5,253,970	5,692,711
Number of towers	47	53	55	56	57

¹Landing or take-off by aircraft that remain at all times within the tower control zone.

²Landing or take-off by aircraft that enter or leave the tower control zone.

³Missed instrument or practice instrument approaches without landing. Prior to June 1, 1971 simulated approaches were counted at source as only one movement. A further modification effective May 1, 1972 grouped simulated approaches under "local movements" and no longer under "type of operation".

15.25 Summary statistics of commercial air services, 1969-73¹

Item	1969	1970	1971	1972	1973
Canadian carriers, revenue traffic only					
Unit toll transportation ²					
Departures	'000	411	428	469	524
Hours flown	"	504	506	531	590
Miles flown	"	148,275	160,927	163,191 ^r	182,796
Passengers carried	"	9,153	10,518	12,557	15,316
Passenger-miles	"	8,174,041	9,636,058	11,488,011 ^r	13,596,692
Cargo and excess baggage ton-miles	"	215,099	259,396	314,249	337,935
Mail ton-miles	"	35,350	38,241	53,438	59,642
Cargo and excess baggage	'000 tons	125	157	170	197
Mail carried	"	31	33	41	48
Bulk transportation ³					
Departures	'000	389	409	428	445
Hours flown	"	478	549	550	634
Miles flown	"	50,994	55,397	63,800	70,757
Passengers carried	"	1,111	1,240	1,523	1,790
Passenger-miles	"	1,309,725	1,915,099	2,010,413	2,482,981
Goods ton-miles	"	65,209	44,112	69,478	81,501
Freight carried	'000 tons	119	115	133 ^r	162
Other flying services ⁴					
Hours flown	'000	230	199	202	233
Canadian carriers, all services					
Revenue traffic					
Departures	'000	820	867	897	969
Hours flown	"	1,196	1,233	1,283	1,457
Miles flown	"	199,269	216,324	226,991 ^r	253,553
Passengers carried	"	10,264	11,758	14,080	17,106
Passenger-miles	"	9,483,766	11,551,156	13,498,424 ^r	16,079,673
Goods ton-miles	"	315,569	341,750	437,165	479,078
Goods carried	'000 tons	275	305	360 ^r	407
Non-revenue traffic					
Hours flown	'000	40	47	47	55
Passenger-miles	"	..	..	..	..
Goods ton-miles	"	..	..	..	..
Fuel consumed	'000 gal	443,414	510,244	562,440	641,518
Oil consumed	"	455	359	408	354
Average employees	'000	29	29	31	34
Salaries and wages paid	\$'000	245,434	282,752	345,236	413,341
Operating revenues	"	701,247 ^r	815,796	1,017,746 ^r	1,214,069
Operating expenses	"	667,379 ^r	783,554	941,434 ^r	1,133,584
Canadian and scheduled foreign carriers, all services					
Hours flown	'000	1,229	1,299	1,265	1,493
Miles flown	"	211,883	229,008	228,458	239,015 ^r
Passengers carried	"	13,219	14,768	15,723	17,737
Goods carried	'000 tons	337	367	399	438 ^r

This table includes data for Levels I-IV carriers only.

¹Although most figures in this table have been taken from the audited reports of commercial air-carriers, some preliminary figures have been used.

²Transportation of passengers or goods at a toll per unit.

³Transportation of passengers or goods at a toll per mile or per hour for the entire aircraft.

⁴Comprises activities such as flying training, aerial photography, and aerial advertising.

15.26 Comparative statistics of domestic and international air traffic, 1973¹

Item		Canadian airlines		Scheduled foreign airlines		Total
		Domestic services	International services	United States¹	Other foreign¹	
Unit toll transportation², revenue traffic only						
Departures	'000	469	55	..	..	624
Hours flown	"	439	151	11	23	624
Miles flown	"	119,911	62,885	3,889	8,637	195,322
Passengers carried	"	11,901	3,415	3,148	1,214	19,678
Passenger-miles	"	7,532,810	6,063,882	194,594	812,193	14,603,479
Goods ton-miles	"	180,772	216,805	2,923	36,442	436,942
Goods carried	'000 lb.	326,420	163,960	77,244	117,376	685,000
Bulk transportation³, revenue traffic only						
Departures	'000	430	15	..	..	445
Hours flown	"	581	53	1	1	636
Miles flown	"	50,224	20,533	251	360	71,368
Passengers carried	"	895	895	52	187	2,029
Passenger-miles	"	152,808	2,330,173	10,713	43,543	2,537,237
Goods ton-miles	"	43,902	37,599	1	1,755	83,257
Freight carried	'000 lb.	304,127	19,251	95	5,105	328,578

¹Hours and miles flown are those flown only over Canada.

²Transportation of passengers or goods at a toll per unit.

³Transportation of passengers or goods at a toll per mile or per hour for the entire aircraft.

15.27 Summary statistics of urban transit systems, 1972

Province	Firms No.	Revenue earned (\$'000)		
		Passenger	Other	Total
Newfoundland	7	700	2	702
Nova Scotia	6	2,844	26	2,870
New Brunswick	4	1,268	193	1,461
Quebec	23	98,249	5,167	103,416
Ontario	33	114,094	5,002	119,096
Manitoba	4	10,528	8,069	18,597
Saskatchewan	4	3,061	55	3,116
Alberta	4	15,248	283	15,531
British Columbia	20	38,167	3,644	41,811
Total	105	284,159	22,441	306,600

Sources

- 15.1 Canadian Transport Commission.
- 15.2 - 15.19 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 15.20 National Harbours Board.
- 15.21 - 15.23 St. Lawrence Seaway Authority.
- 15.24 - 15.27 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.

Chapter 16

Communications

16.1 Telecommunications

The size, topography and climate of Canada have significantly influenced the development of telecommunications in this country. Vast networks of telephone, telegraph, radio and television facilities are necessary to provide efficient communications among Canadians and between Canada and the rest of the world. Canada possesses a unique mix of telecommunications systems — federal, provincial, municipal and investor-owned — whose operations are co-ordinated to carry messages to all parts of the country by land lines, microwave, tropospheric scatter, high-frequency radio and satellite communications systems and to other parts of the world by undersea cables and international satellites.

The almost universal availability of telecommunications service at low cost has been a major factor in stimulating Canada's economic growth and a positive force in binding the country together. The requirements for more and better telecommunications services keep pace with the increase in population, and keeping costs and rates low necessitates constant innovation.

Canada's telecommunications carrier industry, with \$10.3 billion invested in plant, is expanding at the rate of more than \$1 billion a year. Investment for 1974 was \$1.25 billion, a figure expected to reach \$2.5 billion a year by 1980, increasing to \$4 billion a year by 1985.

The Canadian Telecommunications Carriers Association (CTCA), established in 1972, provides the framework for co-operation on an industry-wide basis for the major telecommunications carriers in Canada. The Association consists of 22 telecommunications carrier organizations, each represented on the board of directors by a senior officer. It brings together in one organization, the Trans-Canada Telephone System and its eight members, the Canadian Independent Telephone Association, eight other telephone companies, Canadian National and Canadian Pacific Telecommunications, Teleglobe Canada and Telesat Canada.

CTCA is active in the affairs of the Geneva-based International Telecommunication Union and attempts to secure, through the federal Department of Communications, the compatibility of the Canadian telecommunications system with those of other countries.

16.1.1 Telecommunications media

16.1.1.1 Voice communications

Telephony. There are more than 12 million telephones and 14 million miles of circuits in Canada. About 11 million telephones of the national total are provided by the eight member companies of the Trans-Canada Telephone System: Alberta Government Telephones, British Columbia Telephone Company, Bell Canada, Manitoba Telephone System, Maritime Telegraph and Telephone Company Limited, The New Brunswick Telephone Company, Limited, Newfoundland Telephone Company Limited and Saskatchewan Telecommunications. Almost a million telephones are provided by Edmonton telephones, The Island Telephone Company Limited, Northern Telephone Limited, Okanagan Telephone Company, Ontario Northland Communications, Québec-Téléphone, Télébec Ltée, Téléphone du Nord de Québec Inc., Thunder Bay Telephone Department and Canadian National Telecommunications. In addition, there are about a thousand smaller telephone companies.

Canadian National Telecommunications, geographically the largest single system in Canada, provides telephone service for residents in the Yukon Territory and Northwest Territories, parts of Newfoundland and in northern sections of British Columbia.

Each Canadian telecommunications organization is responsible for service within its own territory and for integrating its facilities with those of all other telephone companies.

Collectively, these companies operate the world's longest microwave system and have access to Canada's domestic satellite system — a telecommunications meld which carries telephone conversations, radio and television programs and computer data coast to coast. Through international connections the Canadian system can reach nearly all of the world's 336 million telephones.

Each year Canadians place some 2.5 million overseas telephone calls. For a basic monthly charge, which gives them access to the system, most telephone users can place as many calls as they wish in a defined area and talk as long as they like. Originally, flat-rate local service in Canada was restricted to the area served by the customer's own exchange. The expansion of major cities and the merging of small towns created larger communities, bringing demand for more extensive flat-rate calling areas. As a result, most telephone companies have introduced Extended Area Service, which enables customers to place calls in a much wider area without paying long distance rates. For this increased service the customer pays a slightly higher monthly fee, based on the number of telephones within his extended area. Customer response is evidenced by continuing increases in the use of the telephone.

Ownerships and regulatory modes of Canada's telecommunications carriers vary. The majority of telephones in Canada are owned and operated by investor-owned companies such as Bell Canada, the British Columbia Telephone Company, Québec-Téléphone and Maritime Telegraph and Telephone Company Limited.

The New Brunswick Telephone Company, Limited, The Island Telephone Company Limited, Newfoundland Telephone Company Limited, Northern Telephone Limited, Téléphone du Nord de Québec Inc., Télecab Ltée and Okanagan Telephone Company are subsidiaries of investor-owned telephone companies.

Alberta Government Telephones, the Manitoba Telephone System and Saskatchewan Telecommunications are provincially owned corporations. Ontario Northland Communications, a division of Ontario Northland Transportation Commission, a provincially owned corporation, provides telephone and telegraph services in the northeastern part of Ontario. Thunder Bay Telephone Department and Edmonton telephones are the country's two largest municipal systems.

Many of the smaller telephone companies are grouped together in the Canadian Independent Telephone Association. Canadian National Telecommunications and Teleglobe Canada are federal Crown corporations.

16.1.1.2 Record communications

Public message. Canada's public message-telegram-service is provided by CNCP Telecommunications. A joint venture of the telecommunications departments of the Canadian National and Canadian Pacific railways, CNCP offers public message service in all provinces of Canada and in the Yukon Territory and the Northwest Territories. Messages can be forwarded or received from any point in Canada or throughout the world via cable and satellite facilities of Teleglobe Canada.

There has been a gradual decline in public message volumes and a correspondingly progressive growth in Telex and Teletypewriter Exchange Service (TWX). Nevertheless, the service continues to cater to transactions of messages related to business and social activities for users who are not on Telex or TWX.

A unique characteristic of the public message service in Canada is that the majority of the users file messages at telegraph offices via telephone and Telex. Relatively few telegrams are filed in person at the counter.

Telex and TWX. Each year some 2.5 million Telex and TWX messages and some 1.5 million telegrams to overseas points are switched through the facilities of Teleglobe Canada; the total world-wide complex provides access to more than 500,000 TWX and Telex subscribers.

Telex, the first North American dial-and-type teleprinter service, was introduced in Canada in 1957. Since then, it has grown to more than 30,000 customers and 160 exchanges throughout the country. It interconnects with Telex networks in the United States and Alaska, and with networks throughout the world.

TWX has some 4,600 subscribers in Canada who have the capability to reach another 40,000 users in the United States. TWX subscribers connect with overseas customers through International Telex, provided by Teleglobe Canada.

Telex and TWX are now considered universal services, available to some 180 countries, 70 of them linked to Teleglobe Canada's Comtex, a computer-controlled exchange permitting subscriber-to-subscriber dialing without the assistance of an operator. Computerized switching integrates the Canadian domestic Telex and TWX networks with the overseas network, handling more than 4,000 messages an hour.

Private wire teletype systems. Although private wire services are still significant in the telecommunications industry, the prime communications users are replacing their private wire systems with computer-controlled store-and-forward systems, or by Telex and TWX.

16.1.1.3 Data communications

The availability of information of all kinds is vital to the management of a modern industrial country. Member companies of the Trans-Canada Telephone System and CNCP Telecommunications offer a wide selection of data communications services.

In business, industry, government and education, information systems have become a basic tool. In most cases, the heart of the system is a computer, required to handle the vast amounts of information involved. And the nerve system is the telecommunications links that make the computer's stored information available anywhere in Canada. Typically a computer communications system consists of a central computer, a number of terminals to access the computer and transmission facilities to link the computer and the terminals. The telecommunications carriers provide terminals, communications processing and communications facilities. A wide range of terminals is provided by many of the carriers: teletype terminals that can be used for computer access, cathode ray tube terminals that display information on a screen and a variety of more specialized machines. Customers may also use their own terminal equipment.

To transmit the data, a number of different systems may be used. Many customers have private-line networks linking their scattered locations. Others employ pay-as-you-use data transmission services. A wide range of transmission speeds is available from less than 100 words a minute up to the equivalent of 50,000 words a minute.

A significant development in data communications was the introduction of digital transmission networks in early 1973, the first nation-wide commercial digital systems in the world. Digital transmission permits reduced costs, since it uses existing circuits much more efficiently, and greatly improved accuracy — vital in high-speed data transfer.

The provision of data communications in Canada is undertaken competitively, by the two major national carriers, CNCP Telecommunications and the Trans-Canada Telephone System. Data communication between Canada and overseas points is provided through the facilities of Teleglobe Canada.

16.1.1.4 The network

Three microwave routes and a satellite system form the backbone of Canada's telecommunications network. Two of the routes belong to the Trans-Canada Telephone System, the third to CNCP Telecommunications. Canada's first coast-to-coast microwave system, completed in 1958 by TCTS, is still the longest single microwave route in the world, almost 4,000 mi, and carries the bulk of network traffic. Telesat Canada provides additional facilities throughout Canada over satellite communications, and Teleglobe Canada uses Intelsat satellites, as well as undersea cables.

Telesat Canada launched Anik I, the world's first domestic geostationary commercial communications satellite on November 9, 1972 and a back-up satellite, Anik II, was launched in 1973.

Initial commercial service to Telesat customers began during January 1973 through a network of earth stations strategically located across Canada. Basically, satellite communication is a long microwave link; transmission is comparable to that of existing microwave systems with the added advantage of the capability to transmit virtually all forms of telecommunications to those areas which had not previously been well served by more conventional means.

The Anik series provides television distribution to all parts of Canada, improved telephone communications to the north and supplements existing microwave systems. The Anik generation of satellites has a projected seven-year life cycle.

The satellites used by Telesat and Teleglobe Canada are stationed about 22,300 miles above the earth. Although Anik is exclusively a Canadian domestic system, other satellites in the Intelsat international system and the vast network of undersea cables make it possible for Canadians to communicate with virtually all countries in the world.

Satellite transmission made its debut with the launching of Telstar in 1962, 10 years after the first long distance telephone and multi-purpose submarine cable in the world (TAT I) was

laid across the Atlantic by Teleglobe Canada and three other carriers. CANTAT I was laid in 1961 with 80 circuits but now CANTAT II, with 1,840 circuits, meets the growing demands for overseas telecommunications between Canada and Europe.

16.1.1.5 Telecommunications in the North

Anik, the Inuit word for "brother", is particularly appropriate to the Canadian satellites series. The advent of Anik I opened a new era of telecommunications in the north providing reliability, flexibility and new services, including television broadcasting, to remote communities not served by terrestrial communications facilities. Previously, northern communication was accomplished mainly by tropospheric scatter systems and high-frequency radio. Both methods, as well as microwave and land line facilities, are still used as dictated by circumstance.

Telecommunications services in the remote north are operated by Ontario Northland Communications, British Columbia Telephone Company, CN Telecommunications and Bell Canada. BC Tel provides telecommunications services along the west coast to Alaska.

CN Telecommunications covers an area that runs north through British Columbia from Fort St. John and includes all of the Yukon Territory and Northwest Territories west of longitude 102°. Bell Canada serves points east to, and including, northwestern Ontario and from the Quebec border east. Ontario Northland Communications serves northeastern Ontario.

Within the vast expanses of the north, both CNT and Bell Canada automatic telephone exchanges are connected to the Canadian networks, and through them to the North American networks and through Teleglobe Canada, to overseas networks. Tropospheric scatter and the domestic satellite systems are used to penetrate the heart of the Arctic and connect to the North American continental telecommunications network. It is also possible to communicate within the coverage area through HF equipment with mining camps, oil and gas exploration sites, construction camps, outposts and other centres.

The basic network of satellite, microwave, radio and land line facilities together with the switched telephone and telegraph networks can be expanded to meet the growing needs in those areas for some time to come.

16.1.2 Telephone and telegraph statistics

Telephone statistics. In 1973 Canada had an estimated 1,049 telephone systems compared to 1,201 in 1972; of these 985 filed returns with Statistics Canada compared to 1,170 in 1972 (Table 16.1). Although the number of co-operative systems declined from 1,072 in 1972 to 890 in 1973, growth in the telephone industry was particularly evident in the large telephone companies. The largest incorporated telephone company, Bell Canada, operates in Ontario, Quebec, Newfoundland and the Northwest Territories. In 1973 it owned and operated 7.1 million of the approximately 12.0 million telephones in Canada. The BC Telephone Company, also owned by shareholders, operated 1.1 million of the total telephones in 1973.

Table 16.2 shows the distribution of telephones by province in 1973. Of the total 71% or 8.2 million were residential telephones and 3.4 million were business telephones. Ontario had the most telephones per 100 population with 57.1 followed by Alberta at 54.8 and British Columbia at 54.5. As Table 16.3 shows, Canadians averaged 854 calls per person in 1973.

Table 16.4 shows the capitalization, revenue and expenditure of telephone companies together with the number of employees, salaries and wages paid for the years 1969-73. Provincial figures for 1973 are given in Table 16.5.

Telecommunications statistics. Nine telecommunications companies operated in Canada during 1973. 1973 showed the first year of commercial operations of Telesat Canada which added almost \$19 million in revenue to the operation of commercial telecommunications carriers. The business of telecommunications companies appears to be changing from direct handling of messages to the leasing of equipment and channels for transmission of messages by others. Increasing revenues from the latter source of income are the main factor in the rise of total operating revenues (see Table 16.6). The property and equipment for these nine telecommunications companies increased by \$145.0 million to \$789.3 million in 1973, from \$644.2 million in 1972. These figures include the investment in property and equipment by Telesat Canada, which in 1973 was reported at \$85.7 million.

16.1.3 Federal regulations and services

The Department of Communications. The Department, established in April 1969, is responsible for ensuring that all Canadians obtain the best possible access to a rapidly expanding range of communications services. Fulfilling this task involves not only technological research and planning, but also exploration of the complex social, human and economic issues which result from changing patterns of communications. The Department protects Canadian interests in the realm of international telecommunications and manages the radio frequency spectrum to permit the development and growth of radio communications.

The duties, powers and functions of the Minister of Communications include all matters relating to telecommunications over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada. The general development and use of communication undertakings, facilities, systems and services for Canada also come under the Minister's jurisdiction. The Department is organized into four sectors (policy, space program, research, and services), each under the direction of an assistant deputy minister.

The policy sector formulates and recommends international and national telecommunications policies and proposes legislation for the government's consideration. This sector co-ordinates federal-provincial relations and is the focal point for contacts with Teleglobe Canada, the Canadian Radio-Television Commission, and the Telecommunications Committee of the Canadian Transport Commission. It also provides technological and socio-economic forecasts, identifies areas needing new research or development, and carries out strategic planning.

The Department's field organization, headed by five regional directors (Atlantic, Quebec, Ontario, Central and Pacific), also reports to the senior assistant deputy minister. It is primarily concerned with management of the electromagnetic spectrum.

The space sector comprises all space-related activities. The responsibilities of the assistant deputy minister include the Communications Technology Satellite (currently the Department's single largest budget item); relations with Telesat Canada and other agencies and departments concerned with space; development of new space systems and applications; and important planning and international functions in this rapidly growing area of communications technology. Reporting to the assistant deputy minister are three directors general, responsible for space programs, space applications and space technology.

The research sector carries out research and development in the complex field of communications, both in-house and through a system of university and industrial contracts. It performs research and development concerned with new communications and computer/communications systems and services, conducts extensive research in the use of the radio frequency spectrum and provides scientific advice to aid in formulating departmental policy and developing new programs. It also seeks to ensure that an adequate level of communications research and development capability is maintained in Canada. The Department's principal research facility is the Communications Research Centre, just west of Ottawa. Reporting to the assistant deputy minister (research) are four directors general, responsible for research policy and planning, education systems technology, radio and radar research and technological and systems research and development.

Within the services sector, the Telecommunications Regulatory Service establishes technical standards for broadcasting facilities and equipment, issues technical certificates and radio operating licences and manages the radio frequency spectrum. Another branch, the Government Telecommunications Agency, provides consulting and centralized telecommunications services for the government. The assistant deputy minister (services) is the Department's principal adviser on organization, personnel, financial management, administration, bilingualism, information, legal matters and security. Through the services sector, the Department maintains liaison with Telesat Canada.

Canadian Transport Commission. Telephone and telegraph companies incorporated under federal legislation are subject to the jurisdiction of the CTC in the matter of rates and practices under the provisions of the Railway Act. Previously the CTC regulated rates only in those cases in which a charge was made to the general public. Amendments to the Railway Act extended its jurisdiction to cover rates charged for private wire services as well. Legislation has been introduced in Parliament to amalgamate the Telecommunications Committee of the CTC with the Canadian Radio-Television Commission.

International telegraph and telephone communications are subject to the International Telecommunication Convention and its regulations, or under regional agreements, or both. Overseas cables landed in Canada are subject to the External Submarine Cables Regulations under the Telegraphs Act.

Radiocommunications in Canada, except for those matters covered by the Broadcasting Act, are regulated under the Radio Act and Regulations which, in addition to providing for the licensing of radio stations performing terrestrial radio services, also provide for licensing earth and space stations engaged in space radiocommunication services, and the Canada Shipping Act and Ship Station Radio Regulations. Radiocommunications in Canada are administered in accordance with the International Telecommunication Convention and Radio Regulations annexed thereto; the International Civil Aviation Convention; and the International Convention for the Safety of Life at Sea. A number of Canada-United States conventions and agreements are also in effect, such as: the Convention for the Promotion of Safety on the Great Lakes by means of Radio; the Convention relating to the operation, by citizens of either country, of certain radio equipment or stations in the other country; the Agreement relating to the Co-ordination and Use of Radio Frequencies above 30 Megahertz; the Television and FM Agreements; and the Agreement relating to the operation in either country of radiotelephone stations licensed in the Citizens Radio Service of the United States and the General Radio Service of Canada. In addition, Canada is a party to the North American Regional Broadcasting Agreement.

The Canadian Radio-Television Commission issues broadcasting licences under the Broadcasting Act of 1968. However, licences are not issued unless the Minister of Communications certifies to the Commission that the applicant has satisfied the requirements of the Radio Act and Regulations, and has been or will be issued a technical construction and operating certificate under that Act. Broadcasting undertakings include radio (AM and FM) and television broadcasting stations, community antenna television (CATV) systems, and network operations. The technical rules and procedures for the allocation of frequency channels and installation and technical operation of broadcasting station facilities are set forth in the Department's *Broadcasting procedures and radio standards specifications*. These documents form the basis for determining the acceptability of applications for technical construction and operating certificates and for the control of the technical operation of broadcasting undertakings. The availability of the technical facilities for broadcasting is subject to the terms of the North American Regional Broadcasting Agreement, the Canada-US Television Agreement and the Canada-US FM Agreements.

Licensing and regulating of radiocommunications. Licensing is the federal government's method of maintaining control over radiocommunications in Canada. Under the Radio Act, radio stations (other than those used in broadcasting undertakings) employing any form of Hertzian wave transmission, including television and radar, must be licensed by the Department of Communications, unless exempted by regulation. The following general radio regulations provide for six classes of radio station licence: coast, land, mobile, ship, earth and space. Various categories of service may be authorized under each of these classes, e.g. public commercial service, private commercial service, amateur, experimental, etc. The number of radio station licences in force in the year ended March 31, 1974 was 334,571 compared with 296,620 for the previous year. These figures include stations operated by federal, provincial and municipal government departments and agencies, stations on ships and aircraft registered in Canada and stations in land vehicles operated for both public and private purposes, but they do not include stations in the broadcasting service. Licensing activities during the year ended March 31, 1974 with comparative figures for the previous year shown in parentheses, include: applications 52,538 (46,694), authorizations 52,240 (44,641), licence amendments 69,142 (70,742), cancellations 18,243 (22,147), total licences in force 334,571 (296,620), and net increase in licences 37,951 (27,810).

Radio standards in general are drawn up in consultation with the electronics industry, interested organizations, associations and the general public, taking into account such technical factors as those which affect frequency spectrum utilization, reliability of apparatus, and compatibility under conditions of service. The Department of Communications maintains an engineering laboratory to develop standard specifications and to test apparatus to ensure compliance with the standards.

Licensing involves assigning specific frequencies to each station. Bands of frequencies are allocated for various types of services, often on a shared non-interference basis. Frequency selection, compatibility evaluation, domestic registration (computerized data base with a file size of more than 55 million characters), and notification with the International Frequency Registration Board (IFRB) of the International Telecommunications Union at Geneva are carried out to ensure efficient use of the spectrum. Assignments are made in keeping with international and domestic statutes and regulations, regional agreements and domestic policies. The IFRB is notified of frequency assignments for technical examination and for inclusion, with appropriate "in-service" dates, in the Master International Frequency Register so that Canadian assignments will receive international recognition and be given protection from interference by foreign stations. In-service dates are necessary when determining prior right to the use of particular frequencies.

The enforcement activities of the Department of Communications include the technical inspection of all radio stations including monitoring and measurement of their radiated signals to ensure compliance with the regulations and conditions of licensing; the location and suppression of radio interference; the technical examination of candidates for the various classes of certificates of proficiency in radio which must be held by the operators of radio stations; and the direction of prosecutions in the courts. These functions are carried out through personnel located at five regional offices, 41 district offices, 10 fixed monitoring stations (five of which have direction-finding facilities), eight mobile monitoring vehicles and 13 regional spectrum observation centres across Canada.

Radio aids to marine and aeronautical navigation. Federal services in aid of marine and aeronautical navigation are provided by the Ministry of Transport. Six regional offices, located at Vancouver, Edmonton, Winnipeg, Toronto, Montreal and Moncton, are responsible for the construction and operation of the facilities.

Radio aids to marine navigation are provided for radio-equipped Canadian vessels and foreign ships using Canadian waters. This safety and communications service for shipping covers the east and west coasts, the Great Lakes, the St. Lawrence River and Gulf, Hudson Bay and Hudson Strait and includes regularly broadcast weather reports, storm warnings and notices of danger to navigation. Ships at sea may obtain medical advice from any coast station. The stations carry out communications by radiotelegraph and/or radiotelephone and most of them provide connections to land telephone lines. Halifax and Vancouver stations provide long-range radiotelegraph and radiotelephone services to ships. Coast stations on Hudson Bay and Hudson Strait provide, in addition to their regular services, commercial communications for various prospecting and development organizations, make weather observations, handle administrative traffic and assist aircraft with information, landing conditions, etc.

Automatic radiobeacon stations are maintained on the east and west coasts, the St. Lawrence River and Gulf, the Great Lakes and Hudson Bay and Hudson Strait, giving navigational aid to mariners by transmitting signals on which bearings may be taken. There are five types of radiobeacons in operation: sequenced, continuously operating (marine and dual-purpose marine/air), marker, ship-calibrating and periodically operating. Sequenced radiobeacons are arranged, where possible, in groups up to a maximum of six stations transmitting in sequence on a common frequency, the sequence being repeated continually regardless of weather conditions. Continuously operating marine radiobeacons transmit a continuous carrier modulated by a tone which is keyed at fixed intervals to provide the identifying Morse characteristic. Continuously operating dual-purpose marine/air radiobeacons are provided for the use of both ships and aircraft. They transmit a continuous carrier modulated by a tone which is interrupted eight times a minute for the transmission of a one- or two-letter identifier. Marker radiobeacons, with a range of 10 nautical miles, do not have a characteristic Morse identifier, but can be identified only by the operating frequency. They operate continuously, transmitting half-second dashes for $13\frac{1}{2}$ seconds then remaining silent for one and a half seconds. Ship-calibrating radiobeacons are available at certain locations to enable ships fitted with direction finders to calibrate their equipment. These radiobeacons operate for a six-hour period on the advertised frequency. Periodically operating radiobeacons are located in areas where there is a limited marine requirement. They normally transmit their characteristic signal continuously for one minute in every 10, using continuous carrier and tone-keyed modulation.

This type of automatic radiobeacon is designed to operate unattended for long periods of time in areas that are isolated or inaccessible for part of the year.

Loran is a long-range radio aid to marine and air navigation providing accurate fixes at distances up to 750 miles by day and 1,500 miles by night. Two Loran A stations operate in Nova Scotia, three in Newfoundland and two on the west coast. These stations, in conjunction with Loran stations of the United States Coast Guard, give service to ships and aircraft plying the North Atlantic and Pacific routes. Decca is a short-range radio aid to navigation providing accurate fixes at distances up to 250 miles. Four chains of Decca stations are in operation — the Newfoundland, the Nova Scotia, the Anticosti and the Cabot Strait — giving service to ships off Newfoundland and Nova Scotia and in the St. Lawrence River and Gulf.

It has become general practice to equip merchant ships with radar and important buoys are fitted with radar reflectors to increase their radar visibility. Ten radar responder beacons are in year-round operation on the east coast, two on the west coast, and five in the St. Lawrence River; nine in the western Arctic and five in the Great Lakes are in operation during the navigation season. Low-power transceivers are provided for use in emergencies at lighthouses, particularly at locations that would otherwise be completely cut off from assistance in case of illness.

Radio aids to air navigation are provided by the Ministry of Transport from coast to coast and from the United States border to the Arctic regions for use by Canadian aircraft and foreign air-carriers flying over Canadian territory.

Low-frequency radio aids operating on the frequency band 200-415 kHz are generally located within a distance of 50 to 100 nautical miles of each other to form the low-frequency airways system. A few are located "off airways" in remote regions and a number of low-power radiobeacons serve major airports as terminal and landing aids. The Ministry of Transport operates 336 en route, low-frequency aids (eight of which are the older type radio range class) and 60 low-power terminal radiobeacons. These facilities are used primarily in association with airborne direction-finding equipment. Voice channels on a number of low-frequency aids are also used for aircraft communications and weather broadcast purposes.

Operating on the higher frequency bands VHF (very high frequency) and UHF (ultra high frequency), the Ministry of Transport operates 69 VHF omnidirectional ranges (VOR), 71 instrument landing systems (ILS) and 32 tactical air navigation systems (TACAN). At 30 locations the VOR and TACAN station are co-located and the complete station is called a VORTAC.

The VOR and VORTAC stations form the VHF airways system which closely parallels the older low-frequency airways system. Additional stations are being installed. Use of the VOR permits the pilot to select any desired course to fly to the station and, in the case of a VORTAC, additional information is provided which is a readout of the distance of the aircraft from the station.

Instrument landing systems provide radio signals which permit aircraft landings during periods of low visibility. Radio transmitters provide lateral and slope guidance to the approach end of the runway and also provide an indication of the distance to the runway threshold.

For air traffic control purposes, there are three main classes of radar in operation at Canadian airports consisting of 15 airport and airways surveillance radars with a range of 150 nautical miles, 10 airport surveillance radars with a range of 50 nautical miles, and eight precision approach radars, which are short-range radars used for landing at major airports.

Radiotelephone communications are provided by 113 ground stations called Aeradio Stations, from which pilots may obtain weather data, air traffic control instructions and other information concerning flight safety. These stations operate for the most part on the VHF band but in the North and on international routes HF is used to provide the necessary long-range coverage. Thirteen of the 113 stations engage in international communications services for Canadian and foreign air-carriers. All these ground stations are connected to a fixed teletype network of more than 48,000 circuit miles to meet aeronautical communications needs.

16.1.4 International services

On December 15, 1975, Teleglobe Canada received Royal Assent as the new name of the Canadian Overseas Telecommunication Corporation. This Crown corporation was set up in 1950 to establish, maintain and operate Canada's external telecommunications services. It acquired existing overseas facilities which amounted to three telephone and 13 telegraph

circuits provided by high-frequency radio and telegraph cable systems. Teleglobe Canada has built up a modern international telecommunications system providing Canadians with telephone, telegraph, telex, video and data transmission services to almost every country in the world through interconnections with global networks of submarine cables, high-frequency radio circuits and satellite circuits.

Teleglobe Canada has participated in the installation of six submarine cables. In 1956 the first long distance telephone and multi-purpose cable in the world was laid across the Atlantic by Teleglobe Canada (representing Canada), Britain and the United States. Next came the first links in the Commonwealth globe-circling system of submarine telephone cables: the transatlantic cable CANTAT in 1961 and the Pacific cable COMPAC in 1963. A microwave route leased from the Canadian domestic carriers connects the CANTAT and COMPAC systems. Although not involved in any of the terminal stations, Teleglobe Canada is a joint owner of the Commonwealth SEACOM cable to Southeast Asia. Another link in the Commonwealth network is the Canada-Bermuda cable.

In conjunction with the Great Northern Telegraph Company of Denmark, Teleglobe Canada installed the ICECAN cable linking Newfoundland with Greenland and Iceland. CANTAT II, a joint project of Canada and Britain, has been in service since April 1974. This 1,840-circuit telephone cable has a greater capacity than all existing transatlantic cables combined.

Teleglobe Canada is a member of the Commonwealth Telecommunications Organization (CTO) whose purpose is to promote the efficient exploitation and development of the Commonwealth external telecommunications system. The corporation is an active participant in the Commonwealth Telecommunications Council which promotes the purpose of the CTO and carries out policies agreed to by governments.

In 1964 the International Telecommunications Satellite Organization (INTELSAT) was formed to operate a global commercial communications satellite system. Teleglobe Canada, as Canada's representative, was one of the initial 11 members of INTELSAT whose members now number 89, and continues to play an active role. The corporation is also represented on the Board of Governors' Advisory Committees on finance, technical, contract, data and patent matters and the Special Committee on Long Range Planning. In addition to the services it provides via undersea cables, Teleglobe Canada supplies communication links to many countries of the world from its earth stations at Mill Village, NS and Lake Cowichan, BC via the two INTELSAT satellites over the Atlantic and one over the Pacific.

Teleglobe Canada participates actively as a representative member in the affairs of the International Telephone and Telegraph Consultative Committee (CCITT) and the International Consultative Committee on Radio (CCIR), two of the four permanent organs of the International Telecommunications Union, to promote international technical and operating standards and procedures. Teleglobe Canada is also associated with a number of national bodies such as the Canadian Telecommunications Carriers Association.

To keep pace with the expansion of overseas facilities from Canada, Teleglobe Canada has introduced sophisticated terminal equipment, automatic telephone switching centres, computer-controlled telegraph, telex and private wire (AUTOCOM) operations, and video and data transmission facilities. The corporation's third international gateway in Toronto (joining those in Montreal and Vancouver) went into operation on June 15, 1974 to link central Ontario directly with Europe.

Teleglobe Canada will provide telecommunications facilities to assure world-wide coverage of the 1976 Olympic Games. Television coverage will be assured by a portable earth station in Montreal and Teleglobe's permanent earth stations.

In the fiscal year 1973-74 Canadians made 2.4 million telephone calls and sent 1.9 million telex and 1.3 million telegraph messages to overseas points via Teleglobe Canada's facilities.

Under a long-term agreement with the Ministry of Transport, Teleglobe Canada charts the CCGS John Cabot, a combination ice-breaker/cable-repair ship to repair cable in the western North Atlantic Ocean.

16.2 Radio and television

The broadcasting system in Canada has both public and private components. The earliest legislation with respect to Canadian broadcasting was passed in May 1932, creating the

Canadian Radio Broadcasting Commission, but the basic principles for radio and television broadcasting have been revised over the years. Under Part II of the Broadcasting Act of 1968 the Canadian Radio-Television Commission was entrusted with the direction of the Canadian broadcasting system. The Commission regulates and supervises all aspects of the system except for technical matters relating to the planning and construction of broadcasting facilities, which are the responsibility of the Department of Communications.

The Canadian Broadcasting Corporation, a publicly owned corporation established by Act of Parliament (now Part III of the Broadcasting Act), provides the national broadcasting service in Canada. Its radio and television facilities extend from the Atlantic Ocean to the Pacific, and north to the Arctic Circle. The CBC, created in 1936 to replace the earlier public broadcasting agency that had operated since 1932, is financed mainly by public funds voted annually by Parliament, with supplementary revenue obtained from commercial advertising. The head office is in Ottawa and the main production centres are Toronto for the English networks and Montreal for the French networks. Regional centres operate across the country.

An applicant for a licence to establish and operate an AM, FM or TV broadcasting station, a community antenna television system (CATV) or a network files application forms with the Secretary of the CRTC. If found acceptable by the Commission, a public notice of the application is issued in the *Canada Gazette* and in one or more newspapers of general circulation within the area served or to be served by such station or system prior to the holding of a public hearing. The same procedure applies to an application for renewal or amendment of an existing licence.

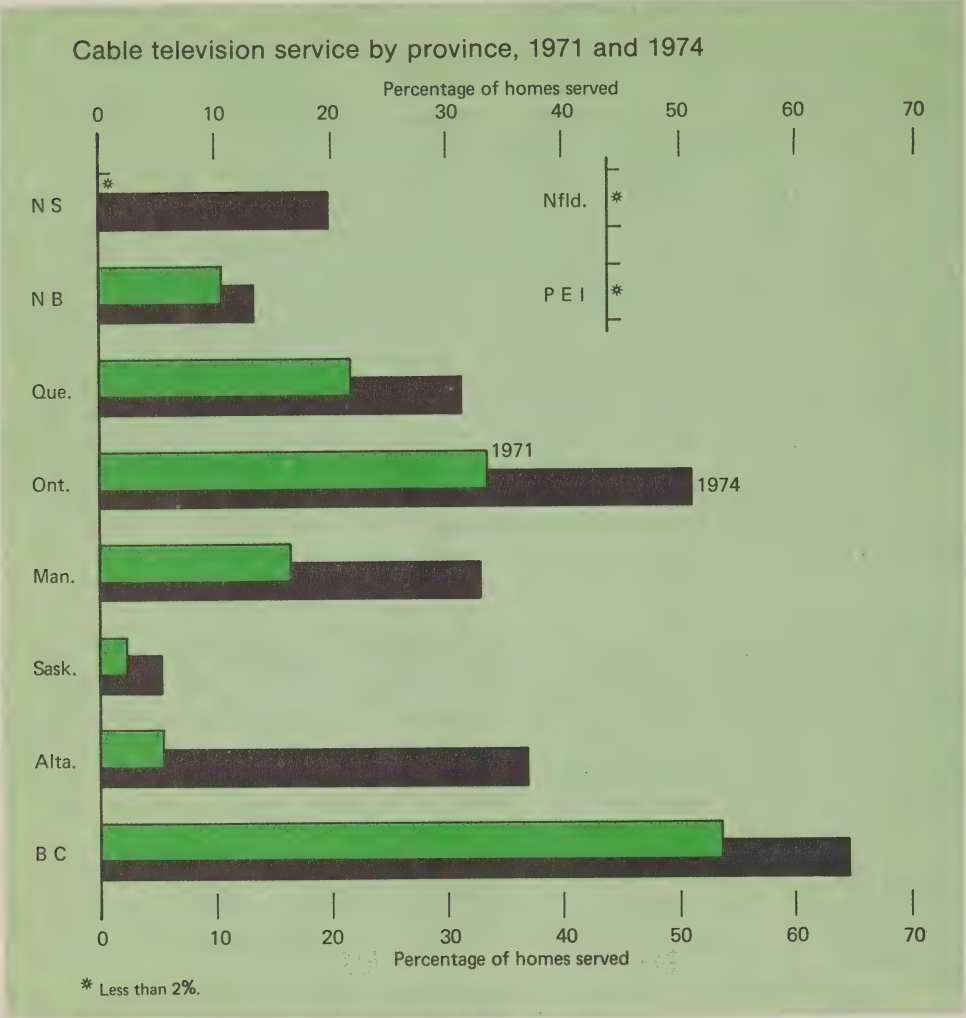
16.2.1 Cable television

Basically, cable television is an antenna system linked to the individual subscriber's set by cable through a series of amplifiers, making it possible to bring in signals he could not otherwise obtain. Cable systems are capable of carrying AM and FM radio as well as VHF and UHF television signals. For this service, the subscriber customarily pays an installation fee and a monthly rental of about \$5. In 1974 there were 387 licensed cable television undertakings operating in Canada. The largest number, 147, was in Quebec with 115 in Ontario and 64 in British Columbia. In September 1974, 40.4% of Canadian homes subscribed to cable television, compared to 34.7% in 1973 and 29.8% in 1972.

Cable television is recognized as an integral part of the Canadian broadcasting system and policies and regulations that concern it must take into account the effects on other aspects of the national system. Cable television systems (CATV) are operated by private companies, each of which must be approved technically by the Department of Communications and licensed by the CRTC.

In July 1971 the CRTC announced its policy on cable television, emphasizing its mandate to provide the best possible service and widest choice from every source for the Canadian viewer. It is recognized that cable television provides an improved picture quality and extends the service area of companies dealing with broadcast transmissions. It has given viewers a greater variety of programs and has made possible a greater information flow. The policy established the composition of the basic services that cable television must provide, including CBC and other Canadian local and regional stations, a community channel and, where requested by provincial authorities, access for educational programming. The CRTC will authorize cable television systems to carry distant stations using microwave or other electronic communication systems which technically extend the receiving system. However, the number of channels carrying signals which are received by microwave from commercial stations not licensed by the Commission will generally be limited to three. The CRTC may limit the authorization to fewer of these signals if it considers that local television service would otherwise be jeopardized.

The capacity of cable television systems to import distant signals can fragment local audiences and can have an adverse effect on local broadcasting outlets. Cable systems take programs off-the-air from locally licensed television stations and distribute them in numerous other areas without contributing to the production cost of these programs. The CRTC has concluded that cable television systems should pay for the Canadian programs and services received over the air by buying additional Canadian programs from local and regional licensees as well as from network sources for play or replay on their systems, thus providing additional



exposure for Canadian programs. A policy of program deletion and replacement, where identical programs are scheduled by stations already serving the community, will enable stations already licensed to serve an area to regain their portion of the local audience without reducing or restricting viewer choice. The CRTC also encourages a similar policy for commercial messages. Although cable licensees will not be permitted to sell advertising, they may remove the commercial content of signals not licensed to serve Canada and insert replacement commercial messages sold by Canadian television stations.

16.2.2 Television broadcasting

Television programming began in Canada in 1952 in Montreal and Toronto, and colour broadcasting in 1966. Of the estimated 6.3 million households in the country, approximately 6.0 million are equipped with one or more television sets. An estimated 54.5% of Canadian households had colour television sets in September 1974 with highest colour ownership in Alberta at approximately 63.9%, and lowest in Prince Edward Island at 40%. Two of the four Canadian television networks are operated by the CBC, one in English and one in French. The other networks are the English-language network of the CTV Television Network Limited which extends across Canada, and the French-language network TVA, at present serving only

Quebec. A third Canadian television network, Global Communications Limited, began operations in Ontario on January 1, 1974.

As at March 31, 1974 Canada had 588 television undertakings owned and operated by the CBC, private English-language affiliates of the CBC, the CTV television network and the TVA network. In addition, there were several independent originating stations in the English language operating rebroadcasting stations as well.

From the start, the development of Canadian television was complicated by geographical and language factors. About half the people of Canada live near the southern border and have access to programs broadcast by one or all of the major US networks. This fact and the need to maintain a Canadian identity and to articulate Canadian interests contributed to the rapid development of Canadian television services. Toronto and Montreal now rank among the world's principal television production centres in the English and French languages; Vancouver, Edmonton, Winnipeg, Ottawa, Quebec City, Halifax, Moncton and St. John's are the regional production centres. The Canadian communications satellites Anik I and Anik II play an increasingly significant role in the efforts to bring radio and television services to the more remote parts of the country, particularly in the Canadian north.

16.2.3 Radio broadcasting

Despite the impact of television, radio remains an important means of communication for Canada's population. The CBC networks provide a wide variety of programming nationally and private local stations attract a large percentage of the listening audience. About 97% of the households in Canada are equipped with radio. In about half of them there is more than one set, and often there is a radio in the car and one or more portable transistor sets. It is estimated that there is one radio for every two persons.

To serve this audience, the CBC operates an English-language network and a French-language network, and there are a considerable number of privately owned radio stations, some affiliated with the CBC networks and some serving an entirely local function. In 1974, 365 AM and 101 FM stations were in operation.

In addition to a coast-to-coast English network and a French network that reaches a large proportion of the country's French-language population in eight of the 10 provinces, the CBC provides regional and local services. Its networks extend over more than 35,000 miles. It has its own news service and offers a wide variety of programs in information, public affairs and entertainment. It also provides three special services — the International Service, the Northern Service, and the Armed Forces Service.

16.2.4 Canadian Broadcasting Corporation

Programming. The program schedules of the CBC are varied, with both light and serious material for a wide range of public tastes. They include news and commentary, documentaries, discussion and interview, music, drama, comedy, science, religion, agriculture, school and youth programming, community services and special events, sports, consumer affairs, arts and letters. CBC enterprises derived from program material include selected program texts in book form, audio tapes of radio talks and documentaries, recordings of Canadian music and poetry and, in the French service particularly, books, records and games for children.

Canadian content in the 1974 English and French television schedules exceeded 70%, well above the 60% required by CRTC regulations. The Corporation is the country's largest employer of Canadian talent, with a payroll in excess of \$25 million. An outstanding presentation of the features department was *Next year in Jerusalem*, a 90-minute dramatic study of the history of the city and its significance to three faiths. Its producer was presented with a Jerusalem Medal on behalf of the Israeli government for his contribution to international understanding. The major part of the CBC's television programming on both networks was in colour.

A special CBC unit, the Olympics Radio and Television Organization (ORTO), is preparing for the 1976 Montreal Summer Olympics. CBC will act as the host broadcaster, providing coverage and facilities for an expected 4,000 broadcasters from 100 countries.

Facilities and coverage. Extensions and improvements in the radio service included the start of operation of 23 low-power relay transmitters and the acquisition of stations at Thunder Bay, Ont., Matane and Sainte-Anne-des-Monts, Que., St. Boniface, Man., and Gravelbourg, Sask.

The networks were extended by 5,204 miles to a total of 35,809 miles. Extensions and improvements in the television service included the further conversion of frontier coverage packages in the North to receive live transmissions, the addition of 37 rebroadcasting stations and the acquisition of stations at Labrador City, Nfld. and Matane, Que. The introduction of satellite telecommunications, via Anik, under contract with Telesat Canada, permitted the elimination of some interprovincial terrestrial communication lines and made possible the immediate provision of live service to 26 northern rebroadcasting stations. This has been accompanied by a reduction in miles of terrestrial network from 12,724 to 11,801.

Increasing use of the satellite will make it possible to extend CBC French services across the country, to improve certain aspects of radio distribution, and to increase regional participation in network programming, especially in the area of news and current events. Through its Community Radio Office, experiments were continued in the use of CBC radio and television transmitters by community organizations to determine the feasibility and adaptability of local programs produced by citizens' groups. In February 1974, the government approved an Accelerated Coverage Plan and the CBC is proceeding with its implementation. This five-year plan embraces more than 600 engineering projects which will extend CBC radio and television service in the appropriate language to all communities in Canada of 500 or more people which are unserved or inadequately served at present. On completion, each of the four networks will reach approximately 99% of the Canadian population.

Special services. Radio Canada International (RCI), the shortwave service of the CBC, broadcasts in 11 languages to Eastern and Western Europe, Africa, Latin America, the South Pacific, the Caribbean and the United States. Radio Canada International also distributes Canadian music and spoken-word recordings to broadcasters in other countries.

The CBC continued its active participation in international organizations such as the Communauté des télévisions francophones, the European Broadcasting Union, the Commonwealth Broadcasting Conference and the Asian Broadcasting Union. CBC programs were sold or exchanged in France, Belgium, Switzerland, Italy, Denmark, England, Ireland, Portugal, Australia, Israel, Hungary and the United States. A six-part series on international co-operation in respect to the Third World was produced in collaboration with six national television services from Africa. At the request of the Canadian International Development Agency, UNESCO and other agencies, the CBC arranged training programs for broadcasters and journalists from the Central African Republic, Gabon, Mali, Chad, India, Malaysia, Singapore, England, Belgium and Japan. CBC personnel were seconded as experts and instructors in Malaysia, India and the Ivory Coast.

CBC Northern Service radio includes medium and shortwave broadcasts, with programs in Eskimo and Indian languages as well as in English and French. Northern radio stations also carry and contribute to the CBC's national programming.

Finances. Total expense of \$309.1 million for the 1973-74 fiscal year including \$11.2 million interest on loans to finance the acquisition of capital assets, increased by \$46 million or 17.5% over that of the preceding year. The total expense as shown does not include the amount of principal instalment on capital loans totalling \$9.3 million.

Gross advertising revenue of \$60.2 million showed an increase of \$7.3 million or 13.8% from last year. Revenue of the television service was \$56.9 million and the radio service \$3.3 million. Combined, these revenues equalled 20.7% of the Corporation's expense, excluding depreciation and amortization, as compared to 21.3% in 1972-73.

The funds required for the net cost of operations, amounting to \$237.7 million including repayment of principal instalment on Canada loans, but excluding depreciation and amortization were provided for in the details of the votes approved by Parliament which comprised Parliamentary payments of \$232.8 million for broadcasting services, \$6 million for the 1976 Summer Olympics and the use of prior years' non-lapsing vote carryover to the extent of \$8.5 million of which only \$3.7 million was required. Of the amount provided for the 1976 Summer Olympics, \$1.3 million was expended for operating costs and \$139,000 for capital expenditures leaving \$4.6 million available for future years' requirements.

16.2.5 Statistics of the broadcasting industry

Statistics on radio and television broadcasting are obtained by Statistics Canada in co-operation with the Canadian Radio-Television Commission. In 1973, 348 private radio

stations and 60 television stations reported. Operating revenue of the broadcasting industry for the year amounted to \$377.5 million, an increase of 15.2% over 1972. Of the total, radio accounted for \$162.7 million or 43.1% and television for \$214.8 million or 56.9%. Revenue from national and network time sales represented 57.5% of the total air time sales and local time sales were 42.5%. Operating expenses in 1973 at \$502.2 million were 15.5% higher than in 1972. However, total operating revenue, plus the net cost of operating the CBC, which is financed from its parliamentary grant, exceeded these expenses, resulting in a net profit after depreciation and interest charges of \$57.6 million for 1973 compared to \$51.5 million in 1972.

In 1973 there were 21,162 employees engaged in the broadcasting industry, an increase of 1,038 or 5.2% over 1972. Salaries and wages paid by the industry totalled \$240.6 million. Fringe benefits, including such expenses as staff pensions and hospitalization insurance, totalled \$16.6 million. After adjustment on account of other income and expenses and income taxes, the final net profit of the private sector of the broadcasting industry in 1973 was \$30.6 million compared with \$27.9 million in 1972.

Statistics of the cable television industry. Table 16.7 presents financial statistics of the Canadian cable television industry. This industry, comprising 362 operating systems, reported an increase of 29.9% in total operating revenue for the year ended August 31, 1973, rising to \$106.9 million from \$82.5 million for the previous year. Subscription revenue from individual subscribers and multi-outlet contracts accounted for \$99.5 million. Operating expenses before deducting interest and depreciation charges rose from \$42.5 million to \$54.4 million in 1973, resulting in net operating revenue of \$52.6 million compared with \$39.9 million in the previous year. After deducting interest, depreciation and making other adjustments, the industry achieved a net profit to August 31, 1973 of \$22.5 million compared with \$16.8 million earned in the previous year.

16.3 Postal service

The basic function of the Canadian Postal Service is to receive, convey and deliver postal matter with speed and security. To do this, it maintains thousands of post offices and uses air, rail, road and water transportation facilities. Associated functions include: sales of stamps and other articles of postage, registration of letters and other mail for dispatch, insuring parcels, accounting for COD articles and transaction of money-order business. Because of its transcontinental facilities, the Post Office assists other government departments with such tasks as selling hunting permits, collecting annuity payments, distributing income tax forms and Public Service employment application forms, and displaying official posters.

Post offices are established wherever the population warrants. In rural areas and small urban centres they transact all the functions of a city office. In larger urban areas, postal stations have functions similar to the main post office, including general delivery service, lock-box delivery and letter-carrier delivery. Canada's larger post offices are complex semi-automated plants with conveyors and chutes, parcel and bag sorting machines, wrapomatic parcel sealing machines, photo-electric counters and intercom systems. Outside the post office building there are mail-mobiles, automatic stamp-vending machines and curbside mail boxes.

The operating service of the Post Office Department is organized into four regions, each headed by a general manager reporting directly to the Deputy Postmaster General. The regions are divided into districts, each headed by a district director. The operating and support functions required to provide postal service to the public are the responsibility of local postmasters who receive technical and administrative assistance from district and regional offices at strategic points.

Postal service is provided throughout Canada. The country's airmail system utilizes most transcontinental flights, supported by many branch and connecting lines, and links up with United States domestic and other international airmail systems. First-class domestic mail is carried by air between Canadian points whenever this expedites delivery. Air stage routes provide an all-class mail service to many northern areas which can be served only by air. There are over 46,000 miles of airmail and air stage routes.

The Assured Mail Program, guaranteeing next-delivery-day service of first-class letters if mailed early in the day, launched in Toronto in 1971, was extended to all major Canadian cities in 1972. By late 1973 the country was completely coded with postal coding machines operating

in the main Ottawa postal station. By January 1975, coding machinery was in operation in six other Canadian centres, Winnipeg, Regina, Saskatoon, Calgary, Edmonton and Toronto.

At March 31, 1974 there were 8,710 post offices in operation; letter-carrier delivery was being provided in 261 urban areas and 5,030 private contractors were delivering mail to 858,246 rural and suburban households. In 1974, 875 city mail services transported mail between post offices and postal stations, collected mail from street letter boxes and delivered parcel post, and 356 side services transported mail between post offices and railway stations, wharves and airports. Intercity transportation of mail by truck was conducted by 710 major services, complemented by 764 feeder or stage services operating to and from smaller centres. Although many of the highway services have replaced rail for the transportation of mail, rail remained the principal mode for long distance movements of other than first-class matter.

Revenue and expenditure of the Post Office Department for the year ended March 31, 1974 were \$591 million and \$768.3 million, respectively; gross revenue receipts were received mainly from postage, either in the form of postage stamps and stamped stationery, postage meter and postage register machine impressions, or in cash. During the year 41 million money orders were issued having a value of \$1,101 million, of which \$1,064.7 million was payable in Canada and \$36.8 million in other countries. The value of money orders issued in other countries and payable in Canada was \$9.0 million.

16.4 The press

Daily newspapers published in Canada in 1974 numbered 116, counting morning and evening editions separately. Combined circulation was about 4.9 million — 82% in English and 18% in French (Table 16.8). Publishers' surveys show that each newspaper is read by an average of three persons.

Daily newspaper advertising net revenue in 1973 was \$415.4 million and circulation revenue was \$120.3 million. By comparison, advertising revenue of 343 private radio stations in Canada in 1972 was \$142.3 million and of 56 private television stations \$120.7 million. In 1974, there were 15 daily newspapers with a circulation in excess of 100,000, accounting for 58% of total circulation. There were 13 dailies published in the French language, 11 of them located in Quebec. Although the circulation of daily newspapers blankets the more populous areas well beyond publishing points, smaller cities and towns and rural areas are also served by 825 weekly newspapers catering to local interests and exercising important local influence. The Canadian society is also enriched by 89 foreign-language daily or weekly newspapers published in 27 languages, often sprinkled with English.

About 36% of Canada's daily newspapers are privately owned or independent. There are three major newspaper chains in the country, owned by Southam Press Ltd. (13 dailies), Thomson Newspapers Ltd. (34 dailies) and FP Publications Ltd. (nine dailies). Both Southam and Thomson Newspapers are publicly owned companies with shares traded on Canadian stock exchanges. Papers in the Thomson chain are concentrated in the smaller cities. Southam accounts for about 20% of total daily circulation, Thomson for 10% and FP for about 21%.

In addition to their own news-gathering staffs and facilities, Canadian newspapers subscribe to a number of syndicated agencies and wire services, the largest being The Canadian Press which is a co-operative agency owned and operated by Canadian dailies. Largely by teletype and wirephoto transmission, it provides its 110 member newspapers with world and Canadian news and also serves radio and television stations. CP has its own news-gathering staff and each member newspaper provides the agency with important local news for transmission to fellow members and members share the cost in ratio to their circulations.

CP carries world news from Reuters (the British agency), from The Associated Press (the United States co-operative) and from Agence France-Presse (of France) and these agencies receive CP news on a reciprocal basis. CP maintains a French-language service in Quebec.

United Press International of Canada, the second major news wire service in Canada, is a private company and a part of United Press International World Service. It provides Canadian and international news and pictures to newspapers and TV and radio stations across Canada and is an outlet for Canadian news through United Press International facilities throughout the world. Certain foreign newspapers maintain bureaus in Ottawa and elsewhere in Canada to collect and interpret Canadian news.

Press statistics. Table 16.8 gives numbers and circulations of reporting English-, French- and foreign-language newspapers, by province, for 1973 and 1974, estimated from *Canadian Advertising*. Circulation figures are given for daily English- and French-language newspapers only. Such circulation figures are relatively easy to obtain because, in their own interest, newspapers qualify for and subscribe to the Audit Bureau of Circulation. For these, ABC “net paid” figures have been used; “controlled” (free) distribution newspapers are not included. On the other hand, circulation data for foreign-language newspapers, weekly newspapers, weekend newspapers and magazines are incomplete and therefore not usable. Foreign-language publications numbered 118 in 1973 and 123 in 1974 (Table 16.9). In 1974 (1973 figures are in parentheses) 19 (19) were in Italian, 18 (17) in Ukrainian, 10 (10) in German, eight (seven) in Hungarian, seven (seven) in Dutch and five (six) in Portuguese.

Sources

- 16.1 - 16.1.1 Canadian Telecommunications Carriers Association.
- 16.1.2 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 16.1.3 Information Services, Department of Communications.
- 16.1.4 Teleglobe Canada.
- 16.2 - 16.2.3 Information Services, Canadian Radio-Television Commission.
- 16.2.4 Audience Services, Canadian Broadcasting Corporation.
- 16.2.5 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 16.3 Public Affairs Branch, Post Office Department.
- 16.4 The Canadian Press; Canadian Daily Newspaper Publishers Association; United Press International of Canada Ltd.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

16.1 Pole-line and wire mileage and number of telephones in use, 1969-73

Year	Systems reporting	Route mileage	Length of wire miles	Telephones in use			Per 100 population
				Business	Residential	Total	
1969	1,618	297,000	53,138,000	2,719,317	6,576,731	9,296,048	43.7
1970	1,376	297,727	56,230,618	2,853,601	6,896,410	9,750,011	45.2
1971	1,171	298,235	59,199,244	2,996,276	7,272,505	10,268,781	47.3
1972	1,170	303,000	62,996,211	3,183,076	7,804,065	10,987,141	50.0
1973	985	342,000	67,940,003	3,428,292	8,249,152	11,677,444	52.3

16.2 Telephones in use, by province, 1973

Province or territory	Telephones						
	On private lines		On party lines		Extensions		Coin telephones
	Business	Residential	Business	Residential	Business	Residential	Business
Newfoundland	15,724	77,686	1,395	27,431	13,205	20,755	1,408
Prince Edward Island	3,946	15,845	362	10,632	2,998	4,825	282
Nova Scotia	29,819	161,040	1,697	46,336	23,247	51,955	3,502
New Brunswick	21,963	118,472	1,120	42,549	24,554	42,265	2,011
Quebec	248,096	1,432,722	7,670	289,794	219,312	423,120	24,290
Ontario	357,874	1,974,336	9,676	453,826	292,583	804,809	30,927
Manitoba	43,878	246,463	2,977	55,826	33,245	63,293	3,350
Saskatchewan	35,509	194,352	2,556	63,590	25,282	57,231	3,108
Alberta	81,546	433,486	2,776	64,713	72,618	144,829	6,884
British Columbia	112,232	459,906	3,313	258,328	85,709	196,944	7,958
Yukon Territory	1,524	2,021	151	1,946	1,103	612	96
Northwest Territories	2,576	4,779	120	1,354	1,568	941	171
Canada	954,687	5,121,108	33,813	1,316,325	795,424	1,811,579	83,987
	Private branch exchanges		WATS ¹	Centrex	Mobile	Total	Telephones per 100 population
	Business	Residential	Business	Business	Business		
Newfoundland	16,214	—	—	259	251	174,328	32.3
Prince Edward Island	3,435	—	—	—	—	42,325	36.5
Nova Scotia	26,882	—	1	8,298	90	352,867	43.6
New Brunswick	20,765	—	150	5,996	98	279,943	42.5
Quebec	314,086	65	1,317	100,074	1,235	3,061,781	50.1
Ontario	485,386	66	2,399	175,352	1,071	4,588,305	57.1
Manitoba	58,539	9	149	4,343	78	512,150	51.0
Saskatchewan	38,116	—	26	—	437	420,207	46.4
Alberta	112,284	—	75	6,180	6,476	931,867	54.8
British Columbia	143,768	—	239	20,077	3,022	1,291,496	54.5
Yukon Territory	1,772	—	—	—	—	9,225	46.1
Northwest Territories	1,434	—	—	—	7	12,950	34.1
Canada	1,222,681	140	4,356	320,579	12,765	11,677,444	52.3

¹On wide area telephone service lines.

16.3 Local and long-distance calls, calls per capita and average calls per telephone, 1969-73

Year	Local calls '000	Long-distance calls '000	Total calls '000	Calls per capita	Average calls per telephone		
					Local	Long-distance	Total
1969	14,596,659	434,292	15,030,951	707	1,570	47	1,617
1970	15,436,847	458,397	15,895,244	737	1,583	47	1,630
1971	16,439,365	495,454	16,934,819	779	1,601	48	1,649
1972	17,776,963	571,944	18,348,907	835	1,618	52	1,670
1973	18,396,642	658,248	19,054,890	854	1,575	56	1,631

16.4 Financial statistics of telephone systems, 1969-73

Year	Capital stock ¹ \$'000	Long-term debt \$'000	Cost of plant \$'000	Revenue \$'000	Expenditure \$'000	Full-time employees	Salaries and wages ² \$'000
1969	1,702,556	2,233,048	5,988,211	1,404,325	1,227,420	66,578	479,068
1970	1,827,746	2,522,040	6,571,028	1,568,726	1,366,645	68,334	540,674
1971	2,005,304	2,861,144	7,255,226	1,725,302	1,504,854	69,995	600,949
1972	2,067,681	3,065,290	7,960,368	1,924,840	1,673,433	72,671	681,187
1973	2,149,479	3,297,124	8,791,434	2,200,702	1,920,424	75,407	775,700

¹Includes premium on capital stock.²Full-time and part-time.**16.5 Financial statistics of telephone systems, by province, 1973**

Province or territory	Capital stock ¹ \$'000	Cost of plant \$'000	Revenue \$'000	Expenditure \$'000	Full-time employees	Salaries and wages ² \$'000
Newfoundland	31,225	94,311	27,220	23,292	1,147	8,144
Prince Edward Island	6,816	27,485	6,628	5,707	277	1,919
Nova Scotia	65,998	262,966	63,426	54,958	3,130	24,747
New Brunswick	58,397	227,204	56,641	48,668	2,392	20,796
Quebec ³	1,627,881	5,375,938	1,385,478	1,196,684	18,993	442,630
Ontario	66,505	113,619	32,548	23,823	23,725	9,588
Manitoba	80	379,261	80,349	75,169	4,333	39,103
Saskatchewan	49,746	330,233	72,711	56,199	2,733	23,687
Alberta	298	881,601	204,671	189,791	7,988	85,486
British Columbia	242,533	1,098,816	271,030	246,133	10,689	119,600
Northwest Territories	—	—	—	—	—	—
Total	2,149,479	8,791,434	2,200,702	1,920,424	75,407	775,700

¹Includes premium on capital stock.²Full-time and part-time.³Includes data of Bell Canada which operates in Newfoundland, Quebec, Ontario and the Northwest Territories.**16.6 Summary statistics of Canadian telecommunications, 1969-73**

Year	Operating revenues \$'000	Operating expenses \$'000	Net operating revenue \$'000	Pole-line mileage	Wire mileage	Em- ployees ¹	Telegrams '000	Cable-grams ² '000	Money transfers \$'000
1969	126,568	92,770	33,798	49,294	563,229	7,860	7,618	4,235	41,654
1970	136,948	100,068	36,880	49,813	553,644	7,678	6,906	4,729	57,867
1971	146,413	107,567	38,846	42,328	739,836	7,553	5,888	5,347	40,833
1972	163,190	115,308	47,882	40,267	761,545	7,323	5,052	6,457	49,594
1973	190,703	140,114	50,588	37,541	754,608	7,047	3,454	7,412	41,944

¹Excludes commission operators.²Includes wireless messages and transatlantic Telex messages.**16.7 Financial statistics of the cable television industry, years ended Aug. 31, 1972 and 1973 (dollars)**

Item	1972	1973
OPERATING REVENUE		
Sales revenue		
Subscription revenue	77,223,617	99,572,757
Installation (or move) revenue	4,288,885	6,405,770
Other sales revenue	13,593	19,057
Incidental operating revenue	938,128	975,006
Total	82,464,223	106,972,590
EXPENSES		
Salaries, wages and fringe benefits	17,146,095	24,561,319
Program origination	1,172,641	1,578,644
Technical service		
Lease payments; head-end and distribution system	3,963,334	5,629,883
Repairs and maintenance to property, plant and equipment	1,708,023	2,319,280
Vehicle expenses (including lease payments)	1,438,532	1,788,872
Miscellaneous technical and service expenses	3,744,066	4,146,327
Advertising, sales and promotion	2,476,935	3,329,874
Administration and general		
Professional services (legal, accounting and consulting)	975,056	1,124,167
Office supplies and expenses	2,358,400	3,105,128
Miscellaneous administrative and general expenses	4,762,231	3,340,956
Other expenses not classified above	2,764,956	3,466,639
Total	42,510,269	54,391,089
Net operating revenue before depreciation, interest and other adjustments	39,953,954	52,581,501
Depreciation	16,999,810	21,708,609
Interest	6,472,595	7,825,788
Other adjustments, addition to (deduction from) income	340,726	(521,045)
Net profit before income taxes	16,822,275	22,526,059
Provision for income taxes	7,602,819	10,114,656
Net profit after income taxes	9,219,456	12,411,403

16.8 Estimated numbers and circulations of reporting English-language, French-language and foreign-language newspapers, by province, 1973 and 1974

Province or territory	1973				1974			
	Daily	Circulation ¹	Weekly ²	Weekend	Daily	Circulation ¹	Weekly ²	Weekend
English-language newspapers								
Newfoundland	3	45,457	9	1	3	46,067	10	1
Prince Edward Island	3	30,880	1	—	3	30,772	1	—
Nova Scotia	6	165,133	28	—	6	164,241	28	—
New Brunswick	5	112,862	14	—	5	118,405	14	—
Quebec	3	324,791	16	1	3	315,520	16	1
Ontario	47	1,995,648	249	—	47	2,033,581	300	1
Manitoba	8	239,696	57	—	8	239,419	64	—
Saskatchewan	4	127,217	88	—	4	132,894	92	—
Alberta	7	342,270	118	—	7	355,014	118	—
British Columbia	17	559,017	104	—	17	584,541	108	—
Yukon Territory and Northwest Territories	—	—	5	—	—	—	6	—
Total	103	3,942,971	689	2	103	4,020,454	757	3
French-language newspapers								
Nova Scotia	—	—	1	—	—	—	1	—
New Brunswick	1	9,476	4	—	1	11,353	5	—
Quebec	11	807,609	135	15	11	790,240	137	15
Ontario	1	43,505	4	—	1	44,587	4	—
Manitoba	—	—	2	—	—	—	2	—
Saskatchewan	—	—	5	—	—	—	6	—
Alberta	—	—	1	—	—	—	1	—
British Columbia	—	—	1	—	—	—	1	—
Total	13	860,590	153³	15	13	846,180	157³	15
Foreign-language newspapers⁴								
Quebec	—	—	13	—	—	—	10	—
Ontario	3	..	53	—	3	..	56	—
Manitoba	—	—	10	—	—	—	10	—
Alberta	—	—	1	—	—	—	1	—
British Columbia	2	..	8	—	2	..	7	—
Total	5	..	85	—	5	..	84	—

¹Circulation not reported for all newspapers.

²Includes semi-weeklies, tri-weeklies and bi-weeklies.

³Includes bilingual papers.

⁴All daily and weekly foreign-language publications given here are considered to be newspapers.

16.9 Estimated numbers of foreign-language publications, 1973 and 1974

Language	1973	1974
Arabic	2	2
Byelorussian	1	1
Chinese	4	5
Croat	2	2
Czech	2	2
Danish	1	1
Dutch	7	7
Estonian	2	2
Finnish	2	2
German	10	10
Greek	6	8
Hungarian	7	8
Icelandic	1	1
Italian	19	19
Japanese	2	2
Korean	..	1
Latvian	1	1
Lithuanian	3	3
Norwegian	1	1
Pakistani	1	1
Philippino	1	1
Polish	4	4
Portuguese	6	5
Scandinavian languages	1	1
Serbian	3	3
Slovak	2	2
Slovenian	1	1
Spanish	3	3
Swedish	2	2
Ukrainian	17	18
Yiddish	4	4
Total	118	123

Sources

16.1 - 16.7 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.

16.8 - 16.9 Compiled by Canada Year Book Staff from *Canadian Advertising*.

Chapter 17

Manufacturing

17.1 Manufacturing industries

Statistics on the manufacturing industries are issued by Statistics Canada on an annual, monthly and quarterly basis, depending on the type of data. The annual Census of Manufactures provides the basic annual data. Among the monthly figures available, two important types of information lend themselves to projecting figures of the annual Census of Manufactures: the survey of manufacturers' shipments, inventories and orders, and surveys of employment and related information.

The monthly shipments, inventories and orders series is published by manufacturing industry for Canada and the provinces, with breakdowns by industry group and by selected industry in the case of the totals for Canada. The data are derived from a survey of respondents to the annual census and are projections of the census total, subject to the qualification that only significant new entries into the manufacturing industries since the latest census are added. The most comprehensive figures resulting from monthly surveys of employment have been estimates of the total number of employees in the manufacturing industries of Canada and the provinces, classified into durable and non-durable goods industries. Both the monthly shipments survey and monthly estimates of employment are based partly on statistical sampling. Both sets of monthly figures also yield totals for the calendar year; while the annual census includes some reports made on a respondent's fiscal year differing from the calendar year, the effect of this is not large.

The data obtained relate to establishments — roughly corresponding to the popular conception of a plant, factory or mill — and, for certain statistics, to non-manufacturing units known as "head offices, sales offices and auxiliary units". For some purposes companies rather than plants or factories are of interest. For example, a company owning factories, mines and merchandising outlets will normally report its profit for the whole company rather than divide it among the different industrial activities in which it is engaged. Thus, the quarterly survey of corporation profits provides figures on sales, profits and certain other statistics for whole companies classified to industries on the basis of their principal activities (for instance, factories might be included in mining or mines in the manufacturing industry). Such figures are generally not comparable with establishment statistics.

Various other monthly and quarterly surveys relate to commodities rather than to establishments or companies. That is, they account for production or shipments of particular products without regard to the industry in which they are produced.

In addition to providing estimates of over-all employment in manufacturing (and other industries), monthly surveying of employment, hours and payrolls results in indexes of employment for larger establishments by industry and by province and sub-provincial area, and in data on average hours and earnings. Monthly indexes of industrial production provide measures of the physical volume of output of the manufacturing industries. That is, they measure output, net of the effects of price changes. These indexes afford annual averages which can be used to indicate movement in the real domestic product at factor cost originating in the manufacturing industries. In addition, many users find valuable information in the large number of monthly industry selling price indexes for various manufacturing industries.

17.1.1 Post-census data

Only preliminary data based on monthly or quarterly surveys are available for 1973 and 1974 as the results of the 1973 Census of Manufactures are still being processed. Table 17.1 compares the value of shipments of goods of own manufacture, by province, for 1973 and 1974 (from a monthly survey) with data for 1972 and earlier censuses, and Table 17.2 makes similar comparisons for industry groups. Table 17.3 gives company data on profitability in various industry groups for the years 1971-73. Because these latter figures relate to companies and those derived from the Census of Manufactures relate to establishments (roughly speaking, plants), the two series are of limited comparability.

17.1.2 Census of Manufactures

Results of the Census of Manufactures are published industry by industry as they become available. The Census of 1972 is the latest for which all industries have been issued. Summary statistics are given in Tables 17.4 - 17.8. The 1970 revision of the Standard Industrial Classification (SIC) substantially affects comparability of data for some industries compiled on the new basis with data for 1969 and earlier years. All data presented here for 1970 and later years are based on the 1970 revision of the SIC except those in Table 17.3 dealing with company profits.

Central Canada accounted for about four out of every five dollars of all value added by manufacture in the manufacturing industries of Canada in both 1971 and 1972; Ontario's contribution in 1972 was 52.9% and Quebec's 27.5%. British Columbia was in third place, accounting for some 9.1% of value added by manufacture. Alberta, Saskatchewan and Manitoba combined were almost as large a contributor, accounting for 7.0%. The Atlantic provinces accounted for 3.5%.

An interesting measure of the intensity of manufacturing activity by region is in terms of value added per capita of their population. The 1972 Canada average was \$1,066; Quebec and British Columbia were both close to this average with \$1,103 and \$984, respectively, but Ontario's average was much higher at \$1,645. The average for the Prairie provinces was \$475 and that for the Atlantic provinces, \$413.

17.1.3 Size of manufacturing establishments

The average size of a manufacturing establishment, in terms of numbers of persons employed, is somewhat over 50 persons but more than one half of the total work force in the manufacturing industries is in establishments employing 200 or more persons. While almost one third of the manufacturing establishments in Canada have fewer than five persons employed, including working owners, these establishments, because of their small average size, account for only about one in 73 persons of the working force of the manufacturing industries (Tables 17.9 - 17.10).

The average size of a manufacturing establishment in terms of shipments of goods of own manufacture was \$1.8 million in 1972 (Table 17.11). However, this average size is greatly affected by the large number of very small establishments which in fact account for only a minor share of over-all shipments. Establishments with \$1 million or more shipments of goods of own manufacture in 1972 accounted for about one establishment in four in the manufacturing industries, but they reported 90.7% of the total value of shipments of goods of own manufacture (Tables 17.12 - 17.13).

17.1.4 Exports of manufactured goods

Export statistics are not broken down into manufactured goods and other goods but the categories "fabricated materials" and "end products" give some indication of the degree of manufacture of such exports and the total for the two can be used as a substitute for manufactured exports. Because exports are not necessarily made by the manufacturer and because of valuation problems, the resulting series are not wholly comparable with Census of Manufactures data on manufacturer's shipments of goods of own manufacture. In the latter, for instance, work by smelters owned by mining companies is valued at an imputed charge to the mine, not at the value of the metal produced. Table 17.14 shows recent trends in exports of manufactures. An important reason for the rising level of exports in the end products category has been the Canada-United States Agreement on Automotive Products of 1965.

17.2 Entries to and exits from manufacturing industries in Canada, 1971-72

In a rapidly changing economic environment, quantitative measures of the extent and nature of changes in a country's major industrial sectors are essential for a proper evaluation of their impact. For manufacturing, one such measure is provided by the number, size, industrial specialization and location of the establishments entering into and exiting from individual industries. This information is relevant in studying issues such as competition, profitability or age distribution of firms.

Until 1971, the only available data on such movements into, and out of, Canadian manufacturing were on the net annual increase or decrease in the number of establishments. With the introduction in the 1971 Census of Manufactures of a system by which a unique



identification number was assigned to an establishment regardless of various changes in its status over time (such as those in name, ownership, location, or industrial classification), it has been possible to analyze entries and exits separately.

Entries to a particular manufacturing industry are of essentially two types: establishments new to the manufacturing sector and those reclassified from another manufacturing industry. The former category is, in turn, composed of two types: newly created manufacturing facilities (plants or establishments) and establishments previously classified to some other industrial sector such as construction, transportation or trade but which have changed the predominant nature of their economic activity to manufacturing.

The second type of entry, the reclassification of an existing manufacturing establishment from one manufacturing industry to another, results from a change in its product mix. For example, if an establishment formerly manufacturing major appliances (SIC 322) changes its operations to concentrate on small electrical appliances (SIC 331), it would be considered as an entry to the latter industry; its data would disappear from one industry and appear in the other.

Each of these two categories of entries has its corresponding type of exit: establishments disappearing from the manufacturing sector and those reclassified to another manufacturing industry. The most obvious reason for the disappearance of an establishment is its physical destruction, such as by fire or demolition. Or it may result from abandonment for various reasons, such as bankruptcy, death of owner, etc. Analogous to the entries to manufacturing from other industrial sectors are the exits to those sectors because the predominant nature of their economic activity is no longer manufacturing. Within the manufacturing sector, an entry by reclassification, e.g. to the manufacturers of small electrical appliances, as mentioned in the previous paragraph, is obviously offset by an accompanying exit by reclassification, in this example, from the manufacturers of major appliances.

Rates of appearance and disappearance. It is interesting to note the industry groups which show the greatest or the least incidence of new establishments or of the disappearance of

establishments. The wood industries have the highest rate in both categories. The high rate of disappearance of establishments in this group is a natural consequence of the rapid rate of rationalization of the sawmills and planing mills industry; in this industry the role of large establishments has been increasing with a "shakeout" of small establishments as technological changes place a greater premium on economies of scale. It will be seen that the disappearance rate of 118.5 establishments per 1,000 reporting the previous year is well above the appearance rate of 89.4 new establishments per 1,000.

After a superficial examination of the data in Table 17.17, no generalization seems possible, but in some cases high appearance rates and high disappearance rates do go together. It is possible that a high rate of establishments going out of business (probably the most important form of disappearance) makes more room for new establishments to enter, sometimes even if there is an over-all downtrend in the number of establishments in the industry as in the wood industries.

But a situation of high disappearance of establishments does not automatically make room for many new establishments. At the other end of the scale, the industry group with the lowest 1972 rate of appearance of new establishments was the leather industries. This group has the third highest disappearance rate; the industry group has had a slow growth rate with competitive conditions favourable to the closing of establishments. In this case it has not meant opportunities for new establishments, as in the wood industries.

In general, one might suppose that industries with many small establishments could have high rates of both appearance and disappearance of establishments. Actually, there is a low negative correlation between the ranks of industry groups in Table 17.17 with respect to their appearance rate and the average size of all establishments is somewhat more marked but not great (a Spearman rank order correlation of about -0.5). A negative correlation suggests that a smaller average size of establishment makes for a higher rate of disappearance. In practice, small average establishment sizes tend to result from the presence of many very small establishments, often prone to go out of business.

At any rate, it is not surprising that the industry group with the highest average size of establishment, the petroleum and coal products industries, has the third lowest rate of establishment disappearance. This industry group is characterized by large technical units and, therefore, by large establishments and companies; it does not have an extensive small business sector. On the other hand, the printing and publishing industries which do have an extensive small business sector, rank low (fifteenth) with respect to the disappearance rate but rank high (fifth) as to the rate of appearance of new establishments. Again, though one can see some possible reasons, generalizations are difficult.

Size of new and disappearing establishments. It is not really possible to measure the size of establishments satisfactorily from Census of Manufactures data for the year in which they either begin or cease operations. A new establishment may begin at any time during the year and therefore report on only a part of a year's activity in the first survey; a similar situation applies to establishments which "die", as they may cease at any time during the reporting period. (Establishments transferred in or out of the manufacturing industries because of changes in their activity do involve whole reporting years as a rule.)

However, it is informative to some extent to compare the ranking of industry groups with respect to the average reported shipments per new establishment or per establishment which disappeared. There is a noticeable relationship between these rank orders and the average size of all existing establishments in the industry. That is, there is a tendency for the size of new establishments to be greater in industries in which establishments are generally larger; likewise, establishments disappearing tend to be larger, the larger the average existing establishment. (The average shipments reported per disappearing establishments show a Spearman rank order correlation of 0.7 with the average size of all establishments the previous year. This coefficient would rise to maximum possible value of 1.0 if the relationship were perfect and positive.)

Of course, statistics for industry groups are in some cases heavily influenced by one or a few of the industries included in the group, with other industries perhaps showing quite a different level of appearance or disappearance of establishments.

Reclassifications. Not only do establishments appear for the first time in the Census of Manufactures or disappear from it, but establishments are moved between industries of the

Census of Manufactures. These moves or reclassifications reflect changes in the activity of the establishments and in some industries the effect for a given year can be appreciable.

Data on such reclassifications are shown in Tables 17.15 and 17.16. In Table 17.15 the two middle data columns show the extent to which figures for an industry group have been affected by establishments reclassified into it from other industry groups of the manufacturing industries. Corresponding columns of Table 17.16 show the extent to which establishments have been moved out of one industry group into another.

These figures are helpful in analyzing the over-all change in data for an industry group between 1971 and 1972. For example, the net change in the shipments of the machinery industries between the two years can be broken down into: the net effect of reclassifying establishments into and out of the machinery industries and out of or into other manufacturing industry groups; the net effect of the new establishments appearing in, or old establishments disappearing from, the Census of Manufactures; and the net change between the two years in shipments of establishments which were in the industry group in both years.

Of course many establishments change their activity to produce goods and services which are characteristic of a related industry in the same industry group. There are thus a large number of reclassifications of establishments within the same industry group. These have no effect on the year-to-year change in the totals for an industry group as is shown in the last two columns of Tables 17.15 and 17.16. These intra-group transfers are identical for the two tables.

The combined effect of the two kinds of reclassification, in and out of industry groups and within them, have some significance for the study of industrial organization. Together, they provide some indication of the extent to which establishments are becoming more (or less) involved in production characteristic of the individual industries belonging to an industry group. This information is, of course, most meaningful for individual industries; the totals for industry groups can only summarize the over-all situation for the industries in the group. The rate of "entry" into a particular industry as shown by new establishments appearing and by existing establishments undertaking activities characteristic of that industry is of interest in studying competitive conditions, price changes and profit levels in an individual industry. The total of the two columns can be thought of as a "proxy" or approximate substitute for an over-all measure of entries into an industry.

17.3 Government assistance to manufacturing

17.3.1 Federal assistance

The Department of Industry, Trade and Commerce is responsible for stimulating the establishment, growth and efficiency of the manufacturing, processing and tourist industries in Canada, and also for developing export trade and external trade policies. It assists Canadian industries to initiate and take advantage of technological advances, improve products and services, increase productivity and expand domestic and foreign markets through a wide variety of programs and services. At each phase of the product cycle — from research, development and design through production and marketing — the Department can assist with information and financial assistance.

Program for the Advancement of Industrial Technology (PAIT). The objective of PAIT is to promote the growth and efficiency of industry in Canada by providing financial assistance for selected projects concerned with the development of new or improved products and processes incorporating advanced technology, which offer good prospects for commercial exploitation in domestic and international markets. The program, initiated in 1965, was revised in 1970 to provide cash grants in lieu of loans, and has been expanded to include assistance for some specific activities outside the development phase.

Financial assistance, normally 50% of the development costs and certain eligible pre-production and marketing expenses, is available to companies incorporated in Canada for projects to be carried out in Canada. Title to any invention or patent is vested in and remains the property of the company. Companies are expected to have the capabilities and facilities to undertake the development work and also to provide for the manufacture and sale of the resulting products.

Industrial Research and Development Incentives Act. This legislation, enacted in March 1967, provides cash grants or equivalent tax credits equal to 25% of capital expenditures of corporations for scientific research and development conducted in Canada, and for the

increase in current expenditures in Canada for scientific research and development over the average of such expenditures in the preceding five years. To qualify for a grant, expenditures must be for scientific research and development which, if successful, is likely to lead to an extension of the corporation's business. In addition, a corporation must undertake to exploit the results of the research and development in Canada and must normally be free to export products resulting from such research and development to all countries of the world.

Automotive Program. The Canada-United States Agreement on Automotive Products, signed in January 1965, provides for the removal of tariffs and other impediments to trade between the two countries in motor vehicles and original equipment parts. The basic objectives of the Agreement are creation of a broader market to permit benefits of specialization and scale, trade liberalization to enable both countries to participate in the North American market on a fair and equitable basis, and development of conditions in which market forces would operate to attain economic patterns of investment, production and trade.

As a result of this program, Canada produces an increasing share of the total North American output of vehicles and components. Canadian exports of vehicles and parts and employment in this industry have increased substantially, and investment in new plants and expansion of existing facilities have been extensive.

The Machinery Program was introduced on January 1, 1968 to increase efficiency in Canadian industry by enabling machinery users to acquire advanced capital equipment at the lowest possible cost while affording Canadian machinery producers tariff protection on what they manufacture. At the same time, Canadian machinery producers are protected by a single statutory rate of duty which applies immediately when they are in a position to supply. This is particularly significant for Canadian producers of custom-engineered machinery.

The program covers a broad range of machines classifiable under Tariff Item 42700-1 including general-purpose machinery, metalworking and woodworking machinery, construction and materials-handling equipment and various types of special industry machinery, such as pulp and paper and plastics industry machinery, and service industry equipment. The statutory rate of duty under that Tariff Item is 2½% British preferential and 15% most-favoured-nation.

The program provides that the duty otherwise payable on machines, accessories, attachments, control equipment, tools and components, imported under Tariff Item 42700-1, may be remitted if such remission is in the public interest and the goods imported are not available from production in Canada. A Machinery and Equipment Advisory Board advises the Minister of Industry, Trade and Commerce regarding the eligibility of machinery for remission of duty in accordance with the provisions of the Tariff Item. The Board, in turn, is assisted by the branches of the Department concerned with individual industries, including machinery manufacturing. Final authority for granting remission lies with the Governor in Council.

Under the program, machinery producers may also apply for remission of duty on production parts and components included in Tariff Item 42700-1 which they cannot procure in Canada. This provision is intended to stimulate Canadian machinery manufacturers to specialize their production and enable them to compete more effectively.

Since June 18, 1971 the Machinery Program has been extended to imports under Tariff Item 41100-1 covering machinery for use in sawmills and logging. In the same year, the Machinery and Equipment Advisory Board took over from the Adjustment Assistance Board the responsibility for examining all tariff remission applications in respect of machinery and equipment or production tooling for the manufacture of original equipment, automotive parts and accessories.

The Building Equipment, Accessories and Materials Program (BEAM) was established to help achieve greater efficiency and productivity in the manufacture and use of building equipment, accessories and materials. The present objectives of the program include: establishment of a comprehensive National Construction Information System; encouragement of modular dimensional standardization and co-ordination; acceleration of the industrialization of the building process; development and expansion of export markets; promotion of uniform building regulations and standards; and encouragement of building design excellence through awards programs.

The program is being implemented and is subject to further development through the Construction Industry Development Council and in co-operation with industry through the major associations. The Council, which is responsible to the Minister of Industry, Trade and Commerce, is national in scope, comprising 35 representatives of the manufacturing, design and contracting sectors of the industry as well as labour unions, universities and government. Co-operating directly in the BEAM program are the Canadian Construction Association, the Royal Architectural Institute of Canada, the Association of Consulting Engineers of Canada, the Specification Writers Association, the National Home Builders Association, and the Housing and Urban Development Association of Canada.

Based on a study which established the needs and priorities for construction information in Canada, a preliminary thesaurus of Canadian construction industry terms has been compiled in both English and French to assist in resolving the ambiguity in construction terminology. A glossary equating French and English construction industry terms has also been prepared. At present the Canadian construction thesaurus is being expanded to produce a Canadian thesaurus of building science and technology.

The pilot phase of the Construction Information System operated by the Canadian Construction Information Corporation has been completed. Results from interviews with users indicate enthusiastic acceptance by the industry. The data bank continues to expand with complete commercial operation expected in the fall of 1975.

The Department has continued to encourage the increased use of dimensional standardization and co-ordination of building components and buildings. Initially, conferences were held throughout Canada to acquaint policy-makers within the industry with the technological and economic advantages of modular standardization. The present program of metric conversion has resulted in an increased emphasis by industry on the benefits of modular co-ordination. In addition, a directory of modular building components is published.

The promotion of universal use of the National Building Code is continuing. Manitoba has established a provincial building code based on the NBC for all larger cities and towns. Alberta, Saskatchewan, Ontario, New Brunswick, Nova Scotia and British Columbia have taken similar action and Quebec is studying its feasibility. A *Building standards index* lists all codes, standards and specifications used in the Canadian construction industry.

Export opportunities for the goods and services of the construction industry continue to be identified through the Department's trade posts abroad and in co-operation with industry.

Industrial design. The design program, authorized by the National Design Council Act 1961 and administered by the Department's Office of Design is aimed at promoting and expediting improvement in the products of Canadian secondary industry. The Office of Design, in co-operation with provincial industry departments, is supporting product design and development programs whereby field teams provide in-company design assistance to small companies.

Other design programs include: financial and technical assistance to education institutions to introduce design training at the technical and university levels; seminars on various facets of design for professionals, educators, business executives and the general public; awards programs for achievements over a broad field of design endeavour; scholarships for advanced training in industrial design in Canada and abroad; grants for design research and promotion by Canadians; and technical and financial assistance to committees and groups attempting to foster effective design on a national, regional or industrial level.

Under the Industrial Design Assistance Program (IDAP) introduced in 1970, manufacturers are given financial support to develop new and improved designs by employing qualified industrial designers. The assistance is available to companies incorporated in Canada and is concentrated on relatively short-term projects of product innovation; it is limited to 50% of the projected design cost, subject to technical and commercial feasibility.

A National Design Council Chairman's Award for Design Management was introduced in 1970, to be presented to the management group which, in the Council's opinion, does the most to integrate and efficiently apply good design policy.

The Defence Industry Productivity Program is designed to enhance the technological competence of the Canadian defence industry in its export activities by providing financial assistance to industrial firms for selected projects. Emphasis is placed on those areas of defence technology having civil export sales potential. Assistance may cover the development of products for export purposes; the acquisition of modern machine tools and other advanced

manufacturing equipment to meet exacting military standards; and assistance with pre-production expenses to establish manufacturing sources in Canada for export markets. Manufacturing equipment projects are selected for assistance on the basis that the machinery acquired will make a significant contribution to increased productivity.

The General Adjustment Assistance Program (GAAP), established in 1968 and revised in 1971, helps manufacturers to improve their competitive position in domestic or export markets. The program also provides assistance to manufacturers who have been injured, or are threatened with serious injury, resulting from disruptive import competition. Assistance under the program is also available to firms that provide marketing, financing or other services essential to the operations of manufacturers described above.

The governing regulations require that eligible firms for whom loan insurance or direct loans are approved be unable to acquire the financing from conventional sources on reasonable terms and conditions without the program's support.

Assistance is available in three forms: government insurance against the risk of loss on loans made by private lenders to finance viable restructuring projects; direct government loans to eligible applicants in special cases; and grants covering up to 50% of cost to manufacturers who require outside consulting assistance to develop restructuring proposals. The program is administered by a General Adjustment Assistance Board on which both private industry and government are represented.

Shipbuilding assistance program. On March 5, 1975 the domestic shipbuilding assistance program, Ship Construction Subsidy Regulations (SCSR) and the export program Shipbuilding Temporary Assistance Program (STAP) were replaced by a combined program of assistance to the shipbuilding industry. This new program provides for a subsidy rate of 14% of approved costs of vessels built in Canada. This subsidy level will be reduced to 8% at the rate of 1% annually starting January 1, 1976. The program also provides for an incentive grant of up to 3% of the cost of vessels entitled to subsidies or purchased by the federal government. This incentive grant will be paid when matched by an equal investment by a shipyard and is for investment which will result in improved performance. The new program will encourage the use of Canadian materials, components and equipment when they are available at competitive prices.

Pharmaceutical Industry Development Assistance (PIDA). This program was authorized by Parliament in March 1968, and is administered by the Pharmaceutical Industry Development Advisory Committee. Through PIDA the Department encourages development of a more efficient pharmaceutical industry; by means of financial assistance, firms are encouraged to form corporate units able to employ competent management and other personnel, perform suitable research and development and undertake effective marketing programs. It enables manufacturers of generic drugs to improve their ability to produce and market lower-priced prescription drugs at more competitive prices by reorganizing their manufacturing and marketing systems. The program is particularly helpful to smaller drug manufacturers. Direct loans at commercial interest rates are available to provide the capital necessary for implementing approved pharmaceutical industry development proposals.

Program to Enhance Productivity (PEP). PEP offers outright grants of specific amounts up to \$50,000 to support half the costs of carrying out intensive feasibility studies on the use and application of innovative techniques to achieve significantly lower unit costs of production in manufacturing and processing industries in Canada.

To be considered for a grant, an applicant should have under development, with reasonably good hope of success, some application of existing technology to the production phase of his operation as distinct from the research stage. If further data on the projected gain in productivity cannot be obtained without committing additional financial resources to a more extensive in-depth feasibility study, and if the investigation would otherwise be shelved, money may be made available under PEP. The program is, however, designed to eliminate support for projects that would in all probability be carried out in the normal course of events.

If the study includes carrying out market research, not more than 25% of total approved costs should represent this component.

The Program for Export Market Development is designed to help increase exports of Canadian goods and services. Canadian companies may obtain repayable contributions toward

defraying approved expenses which would otherwise inhibit their attempts to earn a share of markets. The program is divided into four main components.

Section A, incentives for participation in capital projects abroad, is applicable anywhere outside Canada. The term "capital projects" as used here is intended to describe facilities, systems and other projects requiring the provision of skilled services, engineering products and other capital goods. Section B, market identification and marketing adjustment, emphasizes manufactured goods but it can be more widely applied. It is applicable anywhere outside Canada and the continental US. Section C, participation in trade fairs abroad, is not restricted as to markets, products or services. It is applicable anywhere outside Canada but participants in Canadian national stands at the same fair abroad are not eligible. Section D, incoming foreign buyers, also has no restrictions on markets, products or services. Buyers from anywhere outside Canada and the continental US may be invited by a company to examine products and production in Canada.

The Department's contribution will normally be 50% of airfare and special and unusual costs and \$70 a day toward personnel costs. If a company receiving assistance succeeds in obtaining the business sought, repayment of the Department's contribution will be required, but no repayment is required if the company is unsuccessful.

Promotional Projects Program. The program of trade fairs and missions was set up to promote the export of Canadian products and services. It consists of a number of sponsored promotions designed to meet particular requirements and includes trade fairs abroad, trade missions, in-store promotions, travelling sample shows, incoming trade delegates and buyers programs, export-oriented training programs and, under the programs for export market development, incentives for participation in trade fairs abroad and incentives for incoming foreign buyers.

The Fashion Design assistance program is administered by Fashion/Canada, an incorporated body of representatives from federal and provincial governments and major associations of the Canadian fashion industry. The designer development part of the program provides opportunities for student and established fashion designers to acquire advanced training in their craft. Design/designer promotion publicizes good Canadian fashion design to attract domestic and foreign buyers and promotes increased recognition of talented and well-trained Canadian fashion designers.

Counselling Assistance to Small Enterprises (CASE) provides an opportunity for owners and managers of small businesses engaged in manufacturing or tourism to benefit, at nominal cost, from a service provided by retired business executives selected for their management experience. Under special circumstances government contributions can also be made toward the cost of engaging consulting firms. The program operates from offices in Vancouver, Edmonton, Calgary, Regina, Winnipeg, Toronto, Hamilton, Montreal, St. John's, Fredericton, Moncton, Charlottetown and Halifax.

Through the CASE program, the managers of small companies can discuss their particular problems with experienced businessmen, explore new ideas to help their businesses grow and examine new methods for improving productivity. A CASE counsellor will visit the applicant's place of business, make a detailed analysis of the company's problems and opportunities and recommend action to be taken. He may also help to implement these recommendations. In allotting CASE resources, Canadian-controlled businesses will have priority.

The Development of Management Courses Program is designed to help non-profit professional, industry, business or management associations develop management retraining or upgrading courses of high quality. Assistance in the form of government grants may cover up to 100% but usually not more than 75% of the cost of developing new course material or revising the material for existing courses.

17.3.2 Provincial assistance

Assistance given by the respective provincial governments to manufacturing within their own territories is outlined in the following paragraphs.

Newfoundland. The Newfoundland government, through its Department of Industrial Development, offers advice and assistance to prospective industry in determining desirable plant locations in the province and in preparing feasibility studies. Information can be made available on the source and availability of raw materials, transportation costs, labour costs and

a variety of other economic data. The government will transport industrialists anywhere in the province to obtain a first-hand look at potential plant sites. The Department of Industrial Development also provides liaison with the public and private sectors.

Financial assistance may be provided by the Newfoundland and Labrador Development Corporation in the form of loans against the securities offered by the prospective enterprise, or the acquisition and holding of shares or other securities of any company located in the province, with the right of the enterprise to buy back these shares. The Corporation will also be providing a complete range of management advisory services.

The government may provide direct financial assistance based on cost-benefit analyses. Buildings, where they exist, and land may be provided on very attractive terms. Industrial training facilities are available throughout the province for specialized courses to meet the requirements of incoming industry.

Prince Edward Island. Provincial assistance to manufacturers and processors is provided through Industrial Enterprises Incorporated (IEI), an autonomous Crown corporation administered by an independent board of directors composed of businessmen. IEI provides financial assistance to new and existing manufacturing industries. It identifies specific industrial opportunities, establishes their feasibility and also provides management assistance in industrial engineering, marketing and finance.

The corporation makes loan capital, working capital and equity capital available. It constructs and rents completely serviced factory buildings, provides equipment leasing, maintains industrial property and operates industrial parks. Long-term financing is provided at attractive rates of interest.

IEI establishes contacts with venture capital groups throughout Canada and in other countries who show an interest in Prince Edward Island projects. It maintains an internal consulting group to provide management assistance to PEI companies.

The corporation has set up a Small Business Financing Program to aid manufacturers and processors with annual sales volume of not more than \$250,000. The program can finance 100% of the cost of buildings, 75% of capital cost of machinery, guarantee 50% of working capital and provide 25% of required equity; maximum assistance is \$50,000.

Nova Scotia. Industrial Estates Limited (IEL), a provincial Crown corporation formed in 1957, provides up to 100% mortgage financing on the cost of land and buildings and up to 60% of the installed cost of machinery of new or expanding Nova Scotia manufacturers or processors. Repayment schedules are negotiable and may be accelerated without penalty. Existing tax agreements with most municipalities limit local taxes on IEL-assisted industries to 1% of the building cost for a 10-year period and no tax on equipment or inventory for the same period. IEL's Small Business Financing Division assists manufacturing or processing industries whose gross annual sales do not exceed \$1 million. Financing may include short-, medium- and long-term loans, loan guarantees and minority equity positions. A loan may not exceed \$150,000.

The Nova Scotia Resources Development Board, affiliated with the Department of Development, provides term financing on the security of fixed assets for projects defined under The Industrial Loan Act, The Industrial Development Act, The Agriculture and Rural Credit Act, The Forest Improvement Act and The Fishermen's Loan Act. It provides financing for tourism facilities, farms and primary agriculture processing, fish plants and vessels, saw and planing mills and timber lands.

The Department of Development sponsors the Market Assistance Program which is designed to complement the existing export market development programs administered by the federal Department of Industry, Trade and Commerce. The program provides varying reimbursement schedules for Nova Scotia companies participating in trade fairs, market education programs and incoming buyers programs.

Special municipal tax assistance as authorized under the Nova Scotia Bonus Act may provide assistance to new or expanding firms by limiting either the assessment or the tax rate for a specified period of time.

The province co-operates closely with the Cape Breton Development Corporation, a federal Crown corporation, and contributes financially to some of the industry-development projects sponsored by it.

New Brunswick. The Department of Economic Growth has the over-all responsibility for co-ordinating and implementing provincial industrial development policy. The Department focuses its efforts in this direction through three main operating branches — Regional Development, Transportation and Communications; Investment Management; and Trade and Industrial Services.

The Regional Development, Transportation and Communications Branch directs and co-ordinates provincial transportation policy; develops and directs provincial communications policy; co-ordinates the implementation of the federal-provincial General Development Agreement as it applies to the Department's area of responsibility; and provides assistance to community groups to foster regionally oriented actions to establish and enlarge local industrial development.

The Investment Management Branch reviews and evaluates industrial projects which are presented to the New Brunswick Industrial Finance Board for financial assistance; and provides after-care services to firms that have received financial assistance from the Industrial Finance Board.

The Trade and Industrial Services Branch provides support to industry through programs designed to meet general and specific needs; they include export sales and promotion, management upgrading, technical advice and assistance, import replacement, tariff and documentation assistance, market research and the maximization of New Brunswick product content in public construction and government purchasing.

The Department of Economic Growth also operates the New Brunswick Development Office in London, England. It provides general information and assistance to firms in Britain and Common Market countries which may be interested in a New Brunswick location. The Office also develops and expands European markets for New Brunswick products; encourages joint ventures between New Brunswick and European manufacturers; and facilitates the setting-up of licensing agreements between provincial and European manufacturers.

The New Brunswick Development Corporation, the New Brunswick Industrial Finance Board, Provincial Holdings Limited, New Brunswick Multiplex Corporation, and the Research and Productivity Council are some of the agencies associated with the Department of Economic Growth.

The New Brunswick Development Corporation was established by the government of New Brunswick to attract new industry to the province and to encourage the expansion of existing industries. Its efforts are directed primarily to the secondary manufacturing sector. Existing legislation empowers the Development Corporation to make loans or loan guarantees or to take equity as a shareholder. Financial assistance is not meant to compete with existing conventional lenders and, in practice, the corporation must be satisfied that the funds required could not be obtained from conventional sources on reasonable terms and conditions. In addition to financial aid, NBDC offers free research and investigative services to assist companies setting up initially or expanding and provides a range of after-care services.

The New Brunswick Industrial Finance Board was set up to provide financial assistance to manufacturers or processors in the province. Such assistance normally takes the form of a bank loan guarantee. Terms and conditions are subject to individual negotiation but specifically require the applicant to provide reasonable equity and security in the form of a first charge on assets. The Board is considered to be a lender of last resort and the applicant must, therefore, have unsuccessfully approached normal conventional lenders.

Provincial Holdings Limited was established by the New Brunswick government as a Crown corporation to hold and administer the province's equity position in various companies. This agency is prepared to take an equity position in manufacturing industries wishing to locate in New Brunswick. The extent of the equity taken by Provincial Holdings is negotiable and depends on various factors in a particular proposal.

The New Brunswick Multiplex Corporation was established by the federal and provincial governments to promote and implement the establishment of a metal-working complex in and around Saint John. The project incorporates a relatively new industrial development concept — the planned establishment of a group of main manufacturing plants along with the associated ancillary industries. The principal financial incentives available for companies investing in the metal-working complex are administered by the federal Department of Regional Economic Expansion and consist of capital grants and loan guarantees. The actual

level of a grant which might be paid to any particular company (up to a defined maximum) is determined by the economic impact of the investment and its relationship to the over-all project.

The Research and Productivity Council was established primarily to provide a source of technical support services for New Brunswick industry. The Council maintains a well-equipped centre for engineering and problem-solving, industrial research and development, and management consulting. RPC carries out research and problem-solving on a cost-recovery basis for clients in Canada and abroad. An industrial engineering service is made available to New Brunswick (and Prince Edward Island) companies by RPC through a National Research Council contract. In addition, the National Research Council, in co-operation with RPC, provides free technical information and assistance to New Brunswick (and PEI) companies.

Quebec. In 1971 legislation dealing with financial aid to industry was combined under two Acts: Bill 20, the Quebec Industrial Development Assistance Act, which created the Quebec Industrial Development Corporation; and Bill 21, "an Act to promote industrial development through fiscal advantages". The aim of these programs is to help transform Quebec's industrial structure through aid to high-technology industries and to encourage existing industries to consolidate their production facilities while adapting them to modern techniques to improve their competitive position. Moreover, companies unable to obtain financial assistance at reasonable rates elsewhere are eligible for aid under these programs if it would contribute to the economic development of the province or any of its regions. The amount of assistance granted depends on the area, the kind of goods manufactured and the production techniques used.

The Industrial Development Corporation may grant financial assistance to a manufacturing establishment making a capital investment for construction; purchasing or expanding a plant or factory; investing in machinery, tools or equipment; purchasing licences or patents; or improving the financial organization of the business. Depending on the nature or needs of the company concerned, the assistance may take various forms: loans at lower-than-market interest rates; assumption of part of the costs of a loan; exemption from repayment of part of the loans which the business has contracted with the Corporation subject to meeting certain criteria as to productivity and the creation of new jobs; purchase, by the Corporation, of buildings or machinery for resale or rental to a manufacturer; and purchase of shares of any manufacturing industry up to a maximum of 50% of the paid-up capital stock of the company but not more than 30% of the total assets.

Under the Act to promote industrial development through fiscal advantages (Bill 21), the government may grant a reduction in income tax on corporation profits from any investment in Quebec by manufacturers provided the amount of the investment is at least \$150,000. Permissible investments are for building or expansion of plants or factories or for the purchase of new machinery, tools or equipment. In computing their profits, approved companies may deduct up to 30%, 50% or 100% of their investment depending on the region in which the investment is made.

A manufacturing or processing plant selling and delivering part of its Quebec production outside the province may receive exemption from provincial sales tax on goods purchased for its use or consumption in the proportion that its out-of-province sales bears to its total sales for the year. Under the same program, a business may be exempt from provincial sales tax on gas or electricity used directly for processing. Moreover, the manufacturer is entitled to a partial reimbursement of sales tax paid on construction materials used in his industrial buildings.

A manufacturing firm may also receive total repayment of the tax paid on gasoline or diesel fuel if the fuel is used to operate machinery or as a raw material in the manufacture of certain products. Industrial machinery used in Quebec for manufacturing or processing is also exempt from provincial sales tax.

For a number of years the provincial government has sought to find easier access to export markets for Quebec producers. To this end, through its International Services Branch, the Department of Trade and Industry has economic advisers attached to its delegations and offices abroad, provides financial and technical assistance to firms wishing to participate in industrial shows, organizes trade missions and provides information on export techniques and the various aspects of external trade. In addition, recent amendments to the Quebec Industrial Development Act permit the Industrial Development Corporation to grant financial assistance

to manufacturing or commercial operators exporting goods manufactured in Quebec, provided they meet the criteria set out in regulations under the Act. Finally, through its Industrial Research Institute, the province makes information and technical assistance available to industry throughout the province.

Ontario. The Ontario Development Corporation (ODC), the Northern Ontario Development Corporation (NODC) and the Eastern Ontario Development Corporation (EODC) are Crown agencies established by the Ontario government to provide financial and advisory services to business in order to stimulate industrial growth, economic development and employment opportunities in the province. They report to the Ontario Legislature through the Minister of Industry and Tourism. Their activities are governed by boards of directors composed of representatives from the business and financial communities and organized labour.

Loan programs administered by the ODC, NODC and EODC include the Ontario Business Incentive Program which provides loans to encourage industrial and economic development in Ontario. Incentive loans are repayable, although initial repayment may be deferred. The loans may be interest free or at a rate lower than ODC's prevailing rate of interest.

Term loan programs include: small business loans to Canadian-owned companies in the province to expand their operations in manufacturing or services closely allied to manufacturing; venture capital loans to Canadian-owned companies to introduce new technology; pollution control equipment loans to companies which must install approved pollution control equipment and are unable to finance it from their own resources; tourist industry loans for tourist resort operators to upgrade existing facilities and to establish new accommodation; export support loans to finance the production and warehousing of goods for export against specific orders; and industrial mortgages and lease-backs to assist with the establishment or expansion of manufacturing facilities.

The ODC administers Northam Industrial Park in Cobourg and Huron Industrial Park in Centralia where it rents industrial space and housing. It also manages the sale and leasing of property in Sheridan Park near Toronto to companies engaged in industrial research and development.

The Ontario Ministry of Industry and Tourism has several programs to assist business people. The Tourism Division provides information on location and expansion of tourist operations, economic studies and other pertinent material; it advises tourist and service industry operators on ways to increase and improve their operations. The Industry Division has specific services available to assist manufacturing companies and supporting service industries to maximize use of facilities, apply technology, establish new production facilities and find business opportunities. Technology, industrial design and development, product performance, domestic and international marketing and loan programs are discussed in seminars with independent business people, industrial commissions and municipal councils. The Manufacturing Opportunity Days program presents new products and processes, licensing opportunities, joint ventures from around the world and contracts for tendering.

The Ministry maintains 21 field offices throughout the province to meet local needs and problems and also has a work force covering 35 countries in 15 international field offices; six are in the United States — Boston, Chicago, Cleveland, Los Angeles, Minneapolis and New York. Others are located in Mexico City, São Paulo, Brussels, Frankfurt, London, Milan, Stockholm, Tokyo and Vienna. To aid the manufacturer, the international staff works in conjunction with industrial development officers in Toronto to arrange trade missions, business appointments, plant visits, incoming buyer missions, tourist incentive programs, and to provide consulting services with government and investment representatives. Some trade missions include visits to international trade fairs and exhibitions enabling executives from Ontario companies to see new products and manufacturing techniques which could increase product diversification, manufacturing volume and profits. In addition this program introduces Ontario companies to foreign concerns wishing to establish contacts for licensing or joint ventures or expansion in Canada.

In Mississauga, Ont., the Sheridan Park Corporation has established the Sheridan Park Research Community, a \$42 million undertaking employing 1,600 persons in 10 resident companies and corporations. It has research laboratories and facilities that offer an exchange of ideas and techniques and help participating companies stay competitive in world markets.

Manitoba. The key objective of the Department of Industry and Commerce is to attract and establish industry throughout the province, particularly in rural areas. It has established various branches and agencies that provide industry specialization combined with comprehensive program support.

The Trade and Industry Group consists of four branches with specific commodity interests: Food Industries, Machinery and Equipment, Resource Industries and Construction, Project Development, and a fifth, the Manitoba Trading Corporation which promotes the export of goods and services from Manitoba. Each branch encourages economic growth through expansion of existing firms and attraction of new industries; studies trends in its sector; identifies business opportunities; and assists firms through market research, business development and export services.

The Programs and Productivity Group has five branches directly concerned with implementing programs in the areas of science and technology, design improvement, transportation and distribution systems, management productivity and manpower development and regional development. Some 70 professionals plan and carry out all programs, consulting and engineering services and research activities. The Department works closely with other agencies on matters affecting Manitoba's economic development.

Associated private agencies are supported by Department of Industry and Commerce staff. Through the offices of the Trade and Industry Group the Manitoba Trading Corporation assists Manitoba firms in developing export sales. It works closely with each industry branch and is empowered to appoint agents abroad and to handle exports for Manitoba manufacturers. Its services include extensive practical advice on pricing, documentation, export procedures and tariffs, the organization of trade fair participation, incoming and outgoing missions, buying and selling Manitoba merchandise and the export of professional services. The Corporation can assume all the duties of a sales agent and those of an export department for Manitoba companies. The Manitoba Design Institute promotes and encourages the application of industrial design principles in Manitoba companies through a series of seminars, workshops, product evaluation sessions, packaging clinics and direct assistance.

Manitoba Regional Development Corporations are non-profit organizations set up in 1964 to undertake promotion in a wide sphere of regional interests. They were conceived as a response to some of the challenges facing the rural areas of the province — population out-migration, a relatively slow economic growth rate, and the need for action on a regional basis. Through its Regional Development Branch, the Department of Industry and Commerce has encouraged the formation of regional development corporations in Manitoba with the province contributing to their operating costs. Since their initial inception, seven corporations have been established covering all of Manitoba outside the city of Winnipeg.

Manitoba offers a number of programs to assist companies engaged in production/processing, distribution or specialized construction. The Feasibility Studies Incentive Program facilitates companies in commissioning studies to develop plans for establishing or expanding manufacturing facilities in Manitoba, and in applying for grant assistance from the federal Department of Regional Economic Expansion. The Research and Development Assistance Program enables eligible Manitoba companies to develop innovative products, processes or methods for utilization of the natural resources of the province and allows educational institutions to undertake research and development of significant and direct economic benefit. The Productivity Improvement Program provides productivity audit analyses of individual firms and industry groups by specialists who identify problem areas, obstacles to growth and opportunities for improvement in the marketing, production, technology, manpower, organizational effectiveness and financial areas of the firm, and make recommendations suited to the needs and capabilities of the firm, and assist in implementation. The Manpower Development Program assists Manitoba companies in analyzing their manpower needs and designing human resource development programs to meet specific company requirements. The Design Improvement Assistance Program makes funds available to assist companies in improving the design and quality of their products. The Manitoba Export Assistance Program gives financial support to Manitoba manufacturers who wish to sell goods or services in markets outside the province. The program provides assistance by exhibiting products at trade fairs, bringing potential buyers to Manitoba and organizing sales missions, and by promoting the export of professional services.

The Department maintains a readily accessible Small Business Assistance Centre which is designed to provide rapid response to all small business inquiries. The Centre has a staff of trained consultants who offer direct counselling assistance, or arrange for specialized professional advice from departmental consultants. The Department also has regional development consultants in four rural centres to provide field counselling services to entrepreneurs and local businessmen.

The Manitoba Development Corporation is a Crown corporation established in 1958. The objectives of the corporation are to assist businesses to increase productivity and to raise wage levels. The corporation encourages exports and the substitution of locally developed products for those which are imported.

The corporation provides financial assistance to businesses in the form of loans or investments or both. Technical and managerial assistance is made available in conjunction with the Manitoba Department of Industry and Commerce. The corporation also provides assistance in preparing applications for financing from banks and other sources and applications for federal and provincial grants.

The Communities Economic Development Fund, established in July 1971, provides assistance in the form of loans and loan guarantees to finance new and existing business enterprises in remote and isolated communities. Much of the aid from the Fund is directed toward the northern region of the province with the emphasis on assistance to disadvantaged persons.

Saskatchewan. The primary objectives of the Department of Industry and Commerce are to stimulate the growth of the Saskatchewan economy and to broaden and diversify the economic base of the province. The Department's programs are carried out through its branch organization.

The main functions of the Industry Development Branch are to: encourage the establishment of new manufacturing, processing, distribution and warehouse facilities, resource industries and industrial service operations; assist existing firms to expand and diversify their manufacturing, service and distribution facilities; locate and evaluate development opportunities in manufacturing, processing and resource development, and in the service and warehousing sectors; and compile, publish and distribute information on all phases of Saskatchewan's economic development and potential.

The objective of the Business Assistance Branch is to revitalize and support existing business enterprises in the province by providing counselling and consulting expertise in the fields of accounting, merchandising, transportation and marketing. To make these services accessible to business firms throughout the province, branch representatives are located at six centres outside Regina.

The Trade Development Branch is primarily involved in the promotion of trade in Saskatchewan products in regional, national and international markets, particularly in the US, Europe and the Pacific Rim. The prime contact points for this program are the office of the Agent-General in London, England, and a soon-to-be-established trade office in the Pacific Rim area.

The Tourist Development Branch undertakes activities to assist the Saskatchewan tourist industry to further its development. These activities include: carrying out a marketing program to motivate travel to and within Saskatchewan; providing advice and information to persons wishing to travel in the province; and assisting, through counselling, advice and grants, in the development of tourist attractions.

The new Research and Development Branch collects and disseminates statistical data, and prepares or contracts for, economic feasibility studies to determine what imports and new products might be produced in Saskatchewan, and what primary products can be further refined or processed in the province.

Operation Recycle is a special project initiated to administer the collection of abandoned or scrap vehicles for shredding into acceptable steel furnace feed. It is estimated that approximately 100,000 vehicles will be collected over a three-year period and other recycling projects are under active consideration.

The Industry Incentives Act encourages the establishment, expansion and modernization of industry in certain areas of the province. The program provides assistance in the form of forgivable loans to new or expanding manufacturing establishments. These loans are interest-

free and are made for a period of six years. The Industry and Commerce Development Act authorizes the Department to: make grants to local governments or civic groups for the construction of major tourist facilities or for the promotion of major events and attractions; undertake, either for its own use or on a shared-cost basis with business enterprises, feasibility studies and research to identify new business opportunities; provide, either through department representatives or outside consultants, counselling and advice on all forms of business problems; and make financial assistance available to a community-based group to continue the operation of a business threatened by closure which would seriously disrupt the community in which it is located.

The province also provides financial assistance to business enterprises through the Saskatchewan Economic Development Corporation (SEDCO), a Crown corporation. SEDCO was originally established in 1963 to provide loans for the establishment or expansion of manufacturing enterprises. Since August 1972, its terms of reference have been significantly broadened to permit the provision of financial assistance to virtually all types of businesses. In addition to industrial enterprises, SEDCO loans may now be made to retail, wholesale and service businesses. SEDCO assistance can take many forms, the most common of which is a first mortgage loan over a medium term. Security for such loans consists of specific pledges of land, buildings and/or equipment, and the support of the individuals involved in the business is normally pledged as well. Repayment terms for such loans are designed to suit the income pattern of the enterprise, and may include such features as step-payments, seasonal payments or similar arrangements.

Loans can be granted for terms varying from a few months to 20 years and in amounts from a few thousand to many millions of dollars. The term is determined by the estimated life of security pledged and by the earnings of the business. Equipment-based loans would be for five to eight years, while building and equipment loans might be eight to 12 years, and real estate alone as security would warrant a loan of up to 20 years. Working capital loans would range from one month to two years.

In all cases, the Corporation expects that the owners of the borrowing company will have a reasonable equity contribution in the enterprise. In certain instances, the Corporation may consider taking an equity investment in its own right if required to maintain a reasonable balance between debt and equity. The Corporation also has industrial sites and buildings which it is prepared to make available to eligible enterprises. Lease, lease-purchase or outright sale of such properties can be considered and, in certain circumstances, the Corporation will consider constructing a facility for the subsequent sale or lease to a prospective client.

Alberta. The province assists industry through the facilities of the Alberta Opportunity Company (AOC), a Crown agency created to promote economic growth by stimulating the establishment of new businesses and aiding in the expansion of existing enterprises. In pursuing this objective AOC gives priority to Albertans and Alberta-owned enterprises, small businesses, centres of small population, job-creating projects, research and development projects, promotion of marketing and export potential, enhancement of tourist potential, provision of employment and business experience for Alberta students, encouragement of local development groups and promotion of pollution control projects.

In order to qualify for assistance, a business may be a proprietorship, partnership, co-operative, or corporate body, must be a business operating for gain or profit, must be located or to be located in Alberta, must provide assurance that any assistance provided will be utilized exclusively within Alberta, and must be of a type considered by the Company to be eligible within the terms of the Act and its Regulations. Eligible types of business include manufacturing, processing and assembly operations, service industries, commercial wholesale and retail trade, recreational facilities, tourist establishments, local development organizations, student business enterprises, and new industries of any kind which are unique and valuable additions to the province. The program is not designed to apply to finance companies, suppliers of residential accommodation other than tourist facilities, public utilities including power generation and distribution, resource-based industries such as mining, oil and gas production, logging, farming and ranching.

A number of considerations enter into the decision as to whether or not assistance will be granted: the contribution the project would make to the economy, the local community and the province as a whole; economic viability of the proposal considering capabilities of

management, the business environment, adequacy of over-all financing and technical and ecological considerations; proof that the financial assistance requested is not obtainable from other conventional sources on reasonable terms and conditions; and the availability of security to provide reasonable protection. Assistance may be provided for establishing new businesses, acquiring fixed assets — land, buildings and equipment, expanding existing facilities, strengthening working capital, financing raw material or finished inventories for manufacturers, and research and development projects.

Financial assistance is made available directly or by guarantee in various forms: capital loans; working capital loans; inventory financing for manufacturers for the stockpiling of either the raw materials used in the manufacturing process or finished products resulting from that process (in actual operation AOC will purchase the inventory from the manufacturer under a buy/sell agreement at established prices to a level of 80% of “laid-in” cost or wholesale price, as the case may be); research and development loans up to 50% (maximum \$50,000) of the total cost of an approved project undertaken by a commercial enterprise. Such projects are restricted to applied research and development programs which contribute to improvements in one or more of the following areas: technological advances to products or development of new products; technological advances to production facilities; adoption of improved management techniques; and development of new markets.

Business management counselling services may be provided without charge by AOC professional consultants and include management advice and guidance on financial, technical and marketing matters for small- and intermediate-size Alberta businesses which are not in a financial position to obtain this type of assistance elsewhere. Services under the program are provided through the Company’s head office in Ponoka and its branch offices in Calgary and Edmonton. Financing programs are individually dealt with by an experienced staff of professional personnel. Applications for assistance call for suitable back-up material, such as financial statements, etc., which is studied and broadly assessed. Applications are considered for approval by the board of directors and, normally, funds are available in four to six weeks.

British Columbia. The Department of Economic Development provides services designed to encourage and assist in the orderly growth of secondary manufacturing in British Columbia. The Department organizes and sponsors visits by groups of BC manufacturers to prime export markets in the United States, overseas and elsewhere in Canada. The Department also assists individual companies and groups to participate in international trade shows and fairs.

Through its Technical Assistance Program, the Department will share costs of marketing and feasibility studies for companies considering expansion or diversification. The Department acts as liaison with the British Columbia Development Corporation which was set up to provide loans and loan guarantees to BC industry and business. Department counsellors use statistical information collected and published to encourage regional industrial development and growth of the secondary manufacturing base. The Department also maintains a trade and industry office at British Columbia House in London, England.

17.4 Government aid and controls

17.4.1 The Department of Consumer and Corporate Affairs

The functions of the Department relate to consumer affairs; corporations and corporate securities; combines, mergers, monopolies and restraint of trade; bankruptcy and insolvency; patents, trade marks, copyright and industrial design.

The Department has five main divisions — the Bureau of Consumer Affairs, the Bureau of Corporate Affairs, the Bureau of Intellectual Property, the Field Operations Service and the Bureau of Competition Policy. The Bureau of Consumer Affairs co-ordinates government activities in the field of consumer affairs. Branches within the Bureau include Consumer Services, Consumer Research and the Consumer Standards Directorate. The Bureau of Corporate Affairs administers legislation and regulations pertaining to corporations. Its branches include Corporations, Bankruptcy, Securities and Research. The Bureau of Intellectual Property administers laws pertaining to patents, copyright and industrial design, and trade marks, with a branch responsible for each of these three fields. Canada’s participation in international intellectual property organizations is the responsibility of the Research and International Affairs Branch, and the role of informing Canadians of the

services of the Bureau is provided by the Technical Advisory Services Branch. The Field Operations Service supervises the Department's operations across Canada, staffing regional and district offices in Vancouver, Winnipeg, Toronto, Montreal and Halifax and in several other cities. They ensure that laws and regulations administered by the Department are uniformly applied and interpreted in all parts of the country. The field force includes consumer consultants and information officers in each region, complaints officers, inspectors and specialists in the fields of bankruptcy and false and misleading advertising.

The Bureau of Competition Policy has four operating branches, specializing in Resources, Manufacturing, Services and Trade Practices. There is also a Research Branch that undertakes basic research projects. The Restrictive Trade Practices Commission is an independent administrative commission that reports directly to the Minister.

Anti-combines legislation. Canadian anti-combines legislation seeks to eliminate restrictive trade practices in order to stimulate maximum production, distribution and employment through open competition. Legislative measures, including some formerly included in the criminal code, were amended in 1960 and consolidated into the Combines Investigation Act (RSC 1970, c.C-23).

In general terms, the Combines Investigation Act makes illegal the operation of combines that prevent, or lessen "unduly", competition in production, manufacture, purchase, barter, sale, storage, rental, transportation or supply of an article of trade or commerce, or in the price of insurance. Although the exchange of statistics or defining of product standards are not to be construed as illegal practices, this exemption is not valid if the purpose of the exchange of information is to reduce the possibility of increased competition in the fields of prices, production quantities or quality, customers, markets or distribution channels, or if it has the effect of restricting entry or expansion into that particular business, trade or industry. While combines which relate to export trade only are generally exempt from these constraints imposed by the Act, any such arrangement that may have an adverse effect on the volume of export trade or on the businesses of Canadian competitors or domestic consumers is still subject to prosecution.

Under the Act it is illegal to participate in a merger or a monopoly that has operated, or is likely to operate to the detriment of the public, whether consumers, producers or others.

Price discrimination and "predatory price cutting" are also prohibited by the Act. No supplier may make a practice of discriminating among his competing trade customers by offering more advantageous prices to one over another. Under the law, if a second buyer is willing to buy on the same terms and in the same quantities, he must be given the same price. Prices established by a supplier cannot be set lower in one locality than another, or unreasonably low anywhere, if the policy is designed to eliminate or lessen competition or has that effect.

Advertising or display allowances to competing trade customers must be offered in proportion to their purchases and any expenses required to be incurred by customers must also be in proportion to their purchases. No service may be exacted in return for allowances unless all different types of customers are able to perform that service.

Other sections of the Act forbid misleading or deceptive advertising, either as to normal price or as to presumably factual statements describing goods or property offered for sale.

"Resale price maintenance" is another restrictive practice prohibited by the Act. The suggested list price for goods offered for resale at the wholesale or retail level can be only that — a suggested price. No supplier of goods for resale may prescribe the final price at which the goods must be sold, nor can he cut off supplies if a merchant refuses to abide by the suggested prices. Some relief to the supplier is offered by the qualifications that no one can be automatically considered to have practised resale price maintenance if the goods are withheld because there is sound reason to believe that the merchant was making a practice of using the products of the supplier as "loss-leaders" or as bait advertising, or engaging in misleading advertising or failing to provide the service that the final purchaser had a right to expect.

The Director of Investigation and Research is responsible for investigating combines and other restrictive practices, and the Restrictive Trade Practices Commission is responsible for appraising the evidence submitted to it by the Director and the parties under investigation, and for making a report to the Minister of Consumer and Corporate Affairs. When there are reasonable grounds for believing that a forbidden practice is engaged in, the Director may

obtain from the Commission authorization to examine witnesses, search premises, or require written returns. After examining all the information available, if the Director believes that it proves the existence of a forbidden practice, he submits a statement of the evidence to the Commission and to the parties believed to be responsible for the practice. The Commission then sets a time and place for a hearing at which both sides are represented. The Commission prepares and submits a report to the Minister of Consumer and Corporate Affairs; such reports are required to be published within 30 days. At the completion of an inquiry, the Director may also submit the evidence directly to the Attorney General for prosecution without going to the Commission.

Under the provisions of the Act, general inquiries may be made into restraints of trade which, although not forbidden or punishable, may affect the public interest. In addition to imposing punishment for a contravention of the legislation, the courts, which in this instance includes the Federal Court of Canada, may issue interim injunctions restraining persons from contravening the Act. Prosecutions for offences against the substantive provisions of the legislation may be taken in a superior court as defined in the criminal code.

Nine reports of inquiries under the legislation were published between January 1, 1968 and June 30, 1971 and are listed in the *1972 Canada Year Book* p 1033. Since then the report of inquiry into draught beer in Metropolitan Toronto has become available. Copies of all reports are available from Information Canada or the Office of the Director of Investigation and Research.

Patents. Patents for inventions are issued under the provisions of the Patent Act (RSC 1970, c.P-4) and Patent Regulations have been proclaimed to carry into effect the objectives of the Act. Applications for patents for inventions and requests for information about such patents should be addressed to the Commissioner of Patents, Bureau of Intellectual Property, Department of Consumer and Corporate Affairs.

In the year ended December 31, 1974, 21,287 patents were granted. Of these, 6.43% resulted from inventions made by residents of Canada, 5.69% by residents of Britain and 60% by residents of the United States.

Printed copies of Canadian patents issued from January 1, 1948 to date are available at \$1 each. The *Patent Office Record*, issued weekly, contains a list of patents issued during the week covered, information about services in the Patent Office and information of concern to the patent profession.

Canadian and foreign patents may be consulted at the Patent Office Library. British patents and abridged specifications thereof from 1617 to date and United States patents from 1845 to date are available, as well as many patents, indexes, journals and reports from Australia, India, Ireland, New Zealand, Pakistan, South Africa, Austria, Belgium, Colombia, Czechoslovakia, Egypt, France, Federal Republic of Germany, Italy, Japan, Mexico, the Netherlands, Norway, Sweden, Switzerland and Yugoslavia. A list of the foreign patents available is published in the *Patent Office Record*.

Copyright, industrial design and timber marks. Copyright protection is governed by the Copyright Act (RSC 1970, c.C-30) in force since 1924. Protection is automatic without any formality, although a system of voluntary registration is provided. Copyright exists in Canada in every original literary, dramatic, musical and artistic work and in contrivances by means of which sounds may be mechanically reproduced, if the author was, at the date of making of the work, a British subject, a citizen or subject of a foreign country which has adhered to the Berne Convention and the additional Protocol, or resident within Her Majesty's Dominions and if, in the case of a published work, the work was first published within Her Majesty's Realms and Territories or in such foreign country. The term for which the copyright exists is, except as otherwise expressly provided by this Act, the life of the author and a period of 50 years after his death. Canada belongs to both the International (Berne) Copyright Convention and the Universal Copyright Convention. Under the terms of the Universal Copyright Convention unpublished works of Canadian authors are protected in all convention countries without formalities such as compulsory registration or special manufacturing and printing provisions. The only requirement is with respect to published works. In such cases every copy of the published work must bear, in a prominent place, the copyright symbol, followed by the name of the proprietor and the year of publication.

The Industrial Design Act provides a maximum 10-year period of protection for shape, pattern, ornamentation and/or configuration applied to an article of manufacture, provided that the design is registered within one year of publication in Canada. Protection is granted if an examination does not reveal any other design already registered to be identical with or closely resembling the proposed design. The name of the proprietor, the letters Rd. and the year of registration must appear upon the article to which the design applies.

People or companies who float timber on the inland waters of Ontario, Quebec and New Brunswick must, based on the Timber Marking Act, select a mark or marks and apply for registration thereof within one month after engaging in this business.

Trade marks. The Trade Marks Office, a Branch within the Bureau of Intellectual Property, administers the Trade Marks Act (RSC 1970, c.T-10) which covers all legislation concerning the registration and use of trade marks and supersedes from July 1, 1954, former legislation enacted under the Unfair Competition Act, the Union Label Act and the Shop Cards Registration Act. Correspondence relating to an application for registration of a trade mark should be addressed to the Registrar of Trade Marks, Ottawa.

Applications are advertised for opposition purposes in the *Trade Marks Journal*, a weekly publication that also gives particulars of every registration of a trade mark. The required fee payable on application for registration of a trade mark is \$35 and for advertisement of an application, \$25.

Trade marks registered during the year ended December 31, 1974 numbered 7,982; renewals totalled 3,542.

17.4.2 Trade standards

17.4.2.1 The Standards Council of Canada

The Standards Council of Canada is the national co-ordinating agency through which organizations concerned with voluntary standardization may co-operate in recognizing, establishing and improving standards in Canada. It enables organizations to play a larger and more effective role in formulating and promoting the use of standards to meet the needs of the economy through the National Standards System. The System includes organizations involved in standards-writing and in testing and certification. Furthermore, it encourages the development of a broader and more energetic Canadian standards program to meet both national and international responsibilities.

The objects of the Council are to foster and promote voluntary standardization in fields relating to the construction, manufacture, production, quality performance and safety of buildings, structures, manufactured articles and products and other goods, including components, not expressly provided for elsewhere by law, to advance the national economy, benefit the health, safety and welfare of the public, assist and protect consumers, facilitate domestic and international trade and further international co-operation in the field of standards.

At the end of 1974 the National Standards System had accredited five standards-writing organizations which are authorized to write National Standards of Canada — the Canadian Gas Association, the Canadian Government Specifications Board, the Canadian Standards Association, the Underwriters' Laboratories of Canada and Bureau de normalisation du Québec. Certification organizations and testing laboratories will also be accredited to the System. An Advisory Committee on Standards for Consumers identifies consumers needs in the standards field and makes the necessary recommendations to the Council.

The Council, advised by a Committee on Conversion to Metric (SI) Standards, supports the Metric Commission by providing the technical basis for Canadian conversion and guidance and assistance in planning for, and carrying out, a program to provide standards expressed in the International System of Units (SI) to all organizations participating in metric conversion. Representatives of the National Standards System actively participate in the conversion activities of each of the 10 steering committees and each of the approximately 55 sector committees formed under the auspices of the Metric Commission. The Council is also in close touch with the interdepartmental committees for conversion of the federal, provincial and territorial governments and with the American National Metric Council in the United States.

In the international field, the Council appoints the members and directs the activities of the Canadian National Committee of the International Electro-Technical Commission and is

the member body for Canada in the International Organization for Standardization. The Council co-ordinates and integrates the national and international standards and oversees the accreditation of 280 delegates to represent Canada at over 100 international technical committee meetings each year.

17.4.2.2 Trade standards and regulations

In its consumer program, the Department of Consumer and Corporate Affairs is responsible for the administration of broad legislation which affects the business community. Policies and programming are determined by the Consumer Standards Directorate, and the necessary field supervision by the Field Operations Service.

Hazardous products. The Product Safety Branch administers the Hazardous Products Act which deals with consumer goods. The Act makes specific mention of products designed for household, garden, or personal use, for use in sports or recreational activities or for use by children. It also mentions without reference to end use, poisonous, toxic, flammable, explosive and corrosive products.

Under the Act, the Minister is empowered to establish mandatory standards for application in Canada. Compliance orders now being enforced include the use of shatterproof glass in patio and shower doors, flammability standards for children's sleepwear and protective standards for hockey helmets. Regulations governing toys, cribs and portable car seats are designed to protect children. Other products required to meet rigid specifications include matches, charcoal, ceramics and electrical appliances.

General commodity field. A Packaging and Labelling Act will give uniformity to packaging practices in Canada, reduce the possibilities of deception in packaging and advertising and control proliferation of package sizes. On March 1, 1974 the Consumer Packaging and Labelling Regulations were proclaimed. The effective date of these regulations is September 1, 1975 for non-food items and March 1, 1976 for foods.

Regulations under the Textile Labelling Act, in effect since December 1, 1972, require labels on all consumer textile articles. The label must include fibre names and percentages and the identification of the dealer. The Regulations also deal with misrepresentation in both labelling and advertising. The Textile Care Labelling System of coloured symbols recommending proper care for textile products is a voluntary program at this time. The Canadian Standard Size (CSS) system for children's garments, developed by the Canadian Government Specifications Board in conjunction with the Department of Consumer and Corporate Affairs, is administered under the National Trade Mark and True Labelling Act. This system is also voluntary, although dealers must register for a licence before claiming that the garment does, in fact, conform to the CSS and before affixing such a label to the product.

Control of marking of precious metal articles is maintained under the Precious Metals Marking Act. The new Regulations came into force in July 1973.

Food. In areas of health, grading, standards and composition, the Food and Drug Act, the Canadian Agricultural Products Standards Act and the Fish Inspection Act are generally applicable. The Consumer and Corporate Affairs Department is charged with administration of the economic fraud aspects in distribution. This responsibility relates mainly to labelling and advertising in any segment of the news media.

Among the many important regulations promulgated in 1974 are those which will require a complete list of ingredients on foods and a durable life date on perishable foods effective March 1, 1976.

Advertising. Most legislation has particular requirements to ensure against misleading advertising, but Sections 36 and 37 of the Combines Investigation Act are especially noteworthy as they include general provisions against misleading advertising practices.

Measurement. The Weights and Measures Act prescribes the legal standards of weight and measure for use in Canada; it also ensures control of the types of all weighing and measuring devices used for commercial purposes, and provides for in-use surveillance directed toward the elimination of device-tampering and short-weight sales. A replacing Act has been passed by Parliament and new regulations were proclaimed in August 1974. The fundamental objectives of existing legislation are unchanged. The new Act is an updating, and complements the proposed packaging and labelling legislation.

The Electricity Inspection Act and the Gas Inspection Act control the approval before sale and use of instruments used for billing of electricity and gas whether by meter or other type of device; they also provide for continual in-use inspection.

17.5 Bankruptcies and commercial failures

Two series of figures are included here which, although closely related as far as subject matter is concerned, cover different aspects of the field of bankruptcies and commercial failures. The first is limited to the supervision, by the Superintendent of Bankruptcy, of the administration of bankrupt estates under the Bankruptcy Act (RSC 1970, c.B-3); it gives information on the amounts realized from the assets as established by debtors and indicates that values actually paid to creditors are invariably very much lower than such estimates alone would imply. It can therefore be assumed that this applies in even greater degree to the more extended fields covered in the second section, compiled by Statistics Canada, which is limited to bankruptcies and insolvencies made under federal legislation and includes business failures only.

Administration of bankrupt estates. The Bankruptcy Act was last revised in 1949 and amended in 1966. The amendments were instigated by exposures and suggestions of illegal and improper practices in connection with bankruptcy proceedings or administration. They do not constitute a complete revision of the Bankruptcy Act but were designed to provide, as an interim measure, remedies to the most urgent areas of complaints. They provide the Superintendent of Bankruptcy with direct and immediate authority in the field of investigation and inquiry, and tighten the procedures and requirements in a number of areas, such as that of proposals which an insolvent person may make to his creditors. In other words, these amendments were intended to provide remedies in situations where it had been shown by experience that abuses of the bankruptcy process are most likely to occur. The amendments also contain a new Part X entitled "The Orderly Payment of Debts" which may be brought into force in any province at the request of the provincial authorities concerned. Six areas have taken advantage of this part of the legislation: Alberta on April 17, 1967, Manitoba on June 1, 1967, Saskatchewan on April 1, 1969, British Columbia on June 1, 1970, Nova Scotia on July 1, 1970, Prince Edward Island in April 1971 and the Northwest Territories in November 1972.

A new program called the Small Debtor Program was instituted in June 1972. While it is not an amendment to the Bankruptcy Act, it authorizes federal employees who have been appointed as trustees to handle the estates of certain wage-earners who cannot obtain the services of a private trustee.

A report issued annually by the Superintendent of Bankruptcy gives statistics and comments on various activities in the field of bankruptcy, such as prosecution for offences, issue of licences for trustees in bankruptcy, number of estates reported and closed during the year, and costs of bankruptcy administration in Canada. These data are summarized in Table 17.18.

Returns under the Bankruptcy and Winding-up Acts. Statistics Canada data on bankruptcies and insolvencies cover only failures coming under the federal Bankruptcy Act and the Winding-up Act. Figures cover business failures only. Table 17.19 gives yearly comparisons of liabilities — as estimated by debtors — for the main regions of the country. Table 17.20 shows the number of bankruptcies and insolvencies by industry and economic area for 1973.

Sources

- 17.1 - 17.2 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada.
- 17.3.1 Information Services Branch, Department of Industry, Trade and Commerce.
- 17.3.2 Supplied by the respective provincial government departments.
- 17.4.1 Information and Public Relations, Department of Consumer and Corporate Affairs.
- 17.4.2 The Standards Council of Canada; Information and Public Relations, Department of Consumer and Corporate Affairs.
- 17.5 Superintendent of Bankruptcy, Department of Consumer and Corporate Affairs; Business Finance Division, General Statistics Branch, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

17.1 Value of shipments of goods of own manufacture, by province, 1961 and 1971-74 (million dollars)

Province or territory	1961	1971	1972	1973P	1974P
Newfoundland	135.9	261.9	284.1	367.3	435.4
Prince Edward Island	30.6	58.0	..	..	..
Nova Scotia	381.4	798.2	993.6	1,178.5	1,558.7
New Brunswick	390.6	806.8	965.0	1,168.3	1,633.1
Quebec	7,022.2	13,833.2	15,091.6	17,040.0	21,909.3
Ontario	11,563.7	26,270.6	29,225.0	34,066.7	40,914.0
Manitoba	716.7	1,344.9	1,509.3	1,813.5	2,271.9
Saskatchewan	331.9	578.0	646.5	811.9	1,013.5
Alberta	935.5	2,080.6	2,425.3	2,861.2	3,362.9
British Columbia	1,927.0	4,236.0	5,020.3	6,320.7	7,106.8
Yukon Territory and Northwest Territories	3.4	7.7	..	..	..
Canada	23,439.0	50,275.9	56,234.7 ¹	65,710.2	80,291.5

¹Includes Prince Edward Island, the Yukon Territory and Northwest Territories.

17.2 Value of shipments of goods of own manufacture, by industry group, 1971-74 (million dollars)

Industry group	1971	1972	1973P	1974P
Food and beverage industries	9,111.2	10,251.2	12,390.2	14,712.9
Tobacco products industries	575.2	596.2	651.3	739.6
Rubber and plastics products industries	1,163.9	1,317.3	1,476.6	1,667.8
Leather industries	420.2	447.1	466.3	538.5
Textile industries	1,697.9	1,919.4	2,194.4	2,528.2
Knitting mills	455.1	470.1	522.0	580.5
Clothing industries	1,487.8	1,645.1	1,736.7	1,962.0
Wood industries	2,346.9	3,084.9	3,829.4	3,462.2
Furniture and fixture industries	786.6	958.3	1,125.8	1,345.2
Paper and allied industries	4,000.9	4,414.0	5,187.0	7,458.6
Printing, publishing and allied industries	1,653.8	1,853.5	2,077.7	2,451.5
Primary metal industries	3,948.5	4,193.4	5,027.8	6,542.9
Metal fabricating industries (except machinery and transportation equipment industries)	3,535.4	3,822.0	4,371.4	5,428.1
Machinery industries (except electrical machinery)	1,865.8	2,134.6	2,470.6	3,176.8
Transportation equipment industries	6,931.4	7,747.3	8,877.7	9,894.8
Electrical products industries	2,794.6	3,062.5	3,486.2	4,311.6
Non-metallic mineral products industries	1,489.2	1,665.5	1,937.4	2,298.4
Petroleum and coal products industries	2,114.3	2,441.1	2,962.8	4,904.4
Chemical and chemical products industries	2,782.0	2,943.1	3,481.2	4,537.5
Miscellaneous manufacturing industries	1,115.3	1,267.8	1,437.9	1,750.1
All manufacturing industries	50,275.9	56,234.7	65,710.2	80,291.5

17.3 Net profit before taxes and extraordinary items, as a percentage of total revenue of corporations classified to the manufacturing industries, 1972-74

Industry group ¹	1972	1973	1974
Food and beverage industries	5.3	5.6	4.5
Rubber industries	10.1	7.7	4.7
Textile industries ²	3.3	4.6	5.4
Wood industries ³	6.3	11.4	6.7
Paper and allied industries	3.7	9.4	14.7
Printing, publishing and allied industries	9.8	10.4	10.3
Primary metal industries	7.9	9.4	12.1
Metal fabricating industries	6.5	7.6	8.1
Machinery industries	7.1	7.6	8.9
Transportation equipment industries	6.2	5.7	7.5
Electrical products industries	7.0	7.4	7.5
Non-metallic mineral products industries	8.2	9.8	10.4
Petroleum and coal products industries	11.1	13.7	15.2
Chemical and chemical products industries	8.9	9.7	12.5
Miscellaneous manufacturing industries	9.3	9.3	8.5
All manufacturing industries	6.8	8.1	8.7

¹Adaptation of 1960 revision of the Standard Industrial Classification.

²Includes knitting mills and clothing industries.

³Includes furniture and fixture industries.

17.4 Summary statistics of manufactures, 1963-72

Year	Estab- lish- ments No.	Activity						
		Manufacturing activity						
		Production and related workers			Cost of fuel and electricity ¹ \$'000	Cost of materials and supplies used \$'000	Value of shipments of goods of own manu- facture \$'000	Value added \$'000
		Number	Man- hours paid '000	Wages \$'000				
1963	33,119	1,003,566	2,137,977	4,095,916	564,387	15,337,534	28,014,888	12,272,734
1964	33,630	1,057,502	2,265,188	4,513,633	615,108	16,928,476	30,856,099	13,535,991
1965	33,310	1,115,892	2,384,002	5,012,345	675,641	18,622,213	33,889,425	14,927,764
1966	33,377	1,172,943	2,498,012	5,575,206	731,726	20,642,695	37,303,455	16,351,740
1967	33,267	1,168,651	2,478,916	5,869,085	759,780	21,371,785	38,955,389	17,005,696
1968	32,643	1,160,226	2,458,791	6,278,429	808,764	23,090,970	42,061,555	18,332,204
1969	32,669	1,189,887	2,515,183	6,921,525	860,525	25,383,484	45,930,438	20,133,593
1970	31,928	1,167,063	2,450,058	7,232,256	903,264	25,699,999	46,380,935	20,047,801
1971	31,908	1,167,810	2,448,419	7,819,050	1,000,243	27,661,379	50,275,917	21,737,514
1972	31,553	1,213,106	2,547,609	8,763,104	1,078,916	31,137,946	56,234,663	24,314,751
		Total activity						
		Working owners and partners		Total employees ²		Cost of materials and supplies used and goods purchased for resale ³ \$'000	Value of shipments and other revenue ⁴ \$'000	Value added ⁵ \$'000
		Number	With- drawals \$'000	Number	Salaries and wages \$'000			
1963	33,119	16,030	59,426	1,425,440	6,495,289	17,558,196	30,823,107	12,875,073
1964	33,630	15,747	60,098	1,491,257	7,080,939	19,467,898	34,071,578	14,247,184
1965	33,310	14,620	59,457	1,570,299	7,822,925	21,563,010	37,638,412	15,785,311
1966	33,377	13,894	60,076	1,646,024	8,695,890	24,195,610	41,722,527	17,260,256
1967	33,267	13,377	59,187	1,652,827	9,254,190	25,546,764	44,143,808	18,049,639
1968	32,643	12,084	58,798	1,642,352	9,905,504	27,546,942	47,646,657	19,483,614
1969	32,669	11,583	59,128	1,675,332	10,848,341	30,347,637	52,130,615	21,456,276
1970	31,928	10,760	58,605	1,637,001	11,363,712	30,805,904	52,886,022	21,417,748
1971	31,908	10,286	60,939	1,628,404	12,129,897	33,462,590	57,479,421	23,187,881
1972	31,553	9,793	62,330	1,676,130	13,414,609	37,663,105	64,404,224	26,031,664

¹Cannot be reported separately for manufacturing and non-manufacturing activities but related substantially to manufacturing activity.

²Includes production and related workers, administrative and office employees, sales, distribution and other employees; excludes working owners and partners.

³Includes supplies used in both manufacturing and non-manufacturing activity.

⁴Includes shipments of goods of own manufacture, value of shipments of goods purchased for resale and other operational revenue.

⁵Value of total operational revenue less total cost of materials, supplies, fuel and electricity used and goods purchased for resale in the same condition; all adjusted for inventory changes where required.

17.5 Summary statistics¹ of manufactures, by industry group, 1971 and 1972

Industry group and year	Estab-lish-ments No.	Manufacturing activity			Cost of fuel and electricity \$'000	Cost of materials and supplies used \$'000	Value of shipments of goods of own manu-facture \$'000	Value added \$'000	Total activity		Total value added \$'000
		Number	Man-hours paid '000	Wages \$'000					Number	Salaries and wages \$'000	
Food and beverage industries	1971 5,599	142,427	300,104	852,873	109,336	5,899,753	9,111,176	3,160,060	218,315	1,471,184	3,361,324
	1972 5,377	145,009	301,936	932,519	117,479	6,726,089	10,251,198	3,476,525	220,483	1,595,889	3,695,257
Tobacco products industries	1971 29	7,077	13,629	51,381	2,240	328,743	575,235	233,290	9,680	77,504	235,410
	1972 27	6,885	13,059	53,246	2,225	536,236	596,236	252,091	9,525	82,540	234,645
Rubber and plastics products industries	1971 664	32,593	68,215	204,821	17,133	529,032	1,163,894	615,831	44,672	313,461	649,369
	1972 694	36,076	75,557	245,616	21,229	596,798	1,317,313	719,871	49,100	372,587	762,833
Leather industries	1971 470	24,273	50,012	108,682	3,025	205,483	420,208	213,067	27,930	140,015	219,153
	1972 443	23,616	48,964	112,363	3,211	231,638	447,133	217,772	27,279	145,892	224,428
Textile industries	1971 915	55,150	117,400	297,265	26,361	939,239	1,697,932	725,825	69,350	422,780	751,116
	1972 910	59,115	125,140	340,660	31,091	1,031,735	1,919,425	849,547	74,242	480,835	873,339
Knitting mills	1971 318	20,885	44,321	88,868	3,498	252,374	455,055	202,426	23,919	116,331	202,855
	1972 311	21,752	45,821	99,292	4,018	248,939	470,083	218,950	24,732	127,626	218,299
Clothing industries	1971 2,164	87,495	174,178	362,021	4,560	776,852	1,487,773	709,086	98,457	461,021	716,175
	1972 2,151	90,745	180,076	404,403	5,053	868,162	1,645,146	789,204	102,043	514,502	801,257
Wood industries	1971 3,164	78,420	165,368	517,425	43,500	1,295,814	2,346,945	1,002,939	91,846	638,202	1,016,958
	1972 3,085	87,733	182,598	623,248	52,958	1,647,175	3,084,899	1,397,320	102,699	770,902	1,422,423
Furniture and fixture industries	1971 2,165	35,011	74,314	187,115	7,287	375,291	786,564	408,013	43,021	253,530	414,999
	1972 2,158	38,475	81,952	222,538	8,354	460,446	958,348	496,173	46,942	299,296	505,673
Paper and allied industries	1971 642	90,086	191,811	731,326	243,687	2,023,370	4,000,851	1,772,389	119,709	1,039,306	1,803,583
	1972 654	91,188	195,393	804,920	256,760	2,211,344	4,414,017	1,928,434	120,758	1,135,298	1,961,576
Printing, publishing and allied industries	1971 3,649	49,026	98,751	357,770	10,166	543,026	1,653,839	1,102,138	84,110	649,508	1,125,285
	1972 3,725	49,877	100,927	393,902	11,113	608,559	1,853,532	1,239,417	86,071	712,463	1,263,749
Primary metal industries	1971 405	86,452	179,544	714,600	183,414	1,967,763	3,948,458	1,812,159	114,314	1,017,713	1,841,779
	1972 413	86,335	182,637	781,209	186,299	2,102,098	4,193,421	1,917,318	113,958	1,108,809	1,960,592
Metal fabricating industries (except machinery and transportation equipment industries)	1971 4,143	103,890	221,176	749,349	36,870	1,847,565	3,535,379	1,813,736	137,015	1,060,181	1,889,307
	1972 4,020	105,219	224,486	817,383	39,334	1,697,256	3,821,990	1,962,345	138,309	1,150,517	2,049,396
Machinery industries (except electrical machinery)	1971 913	45,712	96,185	350,173	14,357	968,026	1,865,818	873,212	71,062	584,534	1,010,465
	1972 961	49,975	105,698	409,701	17,084	1,137,144	2,134,648	996,776	77,437	676,016	1,144,875
Transportation equipment industries	1971 963	111,338	236,734	912,231	46,012	4,528,011	6,931,367	2,361,599	130,155	1,337,495	2,756,558
	1972 958	118,384	256,501	1,059,535	51,699	5,100,797	7,747,271	2,631,462	138,105	1,517,008	3,150,950
Electrical products industries	1971 764	74,322	153,251	468,991	21,120	1,388,382	2,794,629	1,389,032	123,181	920,010	1,578,238
	1972 753	76,149	157,825	511,058	22,954	1,541,178	3,062,536	1,553,347	121,135	965,915	1,787,865
Non-metallic mineral products industries	1971 1,307	38,035	82,474	281,047	83,180	549,770	1,489,174	855,686	51,291	489,282	889,282
	1972 1,268	39,149	84,912	316,033	94,533	610,137	1,665,455	973,218	53,087	458,227	1,010,146
Petroleum and coal products industries	1971 101	6,557	14,610	68,215	21,421	1,675,011	2,114,324	429,156	15,517	172,593	435,285
	1972 102	6,583	14,758	75,735	23,875	1,955,581	2,441,065	462,565	15,409	186,037	465,518
Chemical and chemical products industries	1971 1,139	38,621	81,938	288,640	112,038	1,224,549	2,981,997	1,442,547	77,377	669,314	1,582,467
	1972 1,125	37,578	79,608	303,613	117,690	1,303,279	2,943,118	1,524,064	74,731	697,117	1,676,041
Miscellaneous manufacturing industries	1971 2,394	40,440	84,403	226,257	11,038	493,326	1,115,299	615,324	57,483	380,085	708,172
	1972 2,418	43,263	89,757	256,132	11,960	563,238	1,267,828	708,352	60,085	417,134	802,803
Total	1971 31,908	1,167,810	2,448,419	7,819,050	1,000,243	27,661,379	50,275,917	21,737,514	1,628,404	12,129,897	23,187,881
	1972 31,553	1,213,106	2,547,609	8,763,104	1,078,916	31,137,946	56,234,663	24,314,751	1,676,130	13,414,609	26,031,664

¹Data compiled according to the 1970 revision of the Standard Industrial Classification.

17.6 Summary statistics¹ of the forty leading industries, ranked according to value of shipments of goods of own manufacture, 1972

Industry	Estab- lish- ments No.	Manufacturing activity			Cost of fuel and elec- tricity \$ '000	Cost of materials and supplies used \$ '000	Value of shipments of goods of own manu- facture \$ '000	Value added \$ '000	Total activity		Total value added \$ '000
		Number	Man- hours paid '000	Wages \$ '000					Number	Salaries and wages \$ '000	
1 Motor vehicle manufacturers	22	30,580	69,093	332,725	15,753	3,124,163	4,033,647	906,774	44,042	511,456	1,362,071
2 Pulp and paper mills	141	61,196	131,426	594,291	244,370	1,483,871	3,127,821	1,374,129	78,969	808,869	1,380,052
3 Slaughtering and meat processors	468	23,093	49,013	184,313	13,636	2,121,848	2,351,415	428,649	31,293	254,683	435,364
4 Petroleum refining	41	5,870	13,250	69,977	22,428	1,908,001	2,361,709	431,301	14,376	176,984	430,520
5 Motor vehicle parts and accessories manufacturers	211	37,921	82,249	342,238	20,530	1,028,599	1,903,161	866,628	46,189	438,992	876,042
6 Iron and steel mills	48	38,338	80,841	369,891	74,334	923,729	1,900,799	909,369	49,758	508,216	921,737
7 Sawmills and planing mills	1,567	4,787	102,814	370,195	33,400	1,004,018	1,893,573	864,865	57,111	447,712	869,320
8 Dairy products industry	731	13,710	29,410	94,634	23,052	1,163,721	1,573,723	392,058	28,947	219,113	439,955
9 Miscellaneous machinery and equipment	759	35,177	74,434	289,285	11,472	731,996	1,454,351	717,137	53,256	465,102	793,609
10 Smelting and refining	26	21,509	20,750	88,339	88,283	359,104	977,961	350,369	33,829	334,757	536,918
11 Miscellaneous food processors, n.e.s.	26	11,158	25,436	135,434	10,693	300,293	808,876	595,040	9,047	149,434	419,910
12 Metal stamping and pressing industry	528	17,780	38,412	137,972	7,273	387,911	828,511	590,904	23,283	198,917	490,915
13 Commercial printing	2,150	29,771	60,707	270,939	5,281	387,911	828,511	590,904	40,905	333,935	530,000
14 Communications equipment manufacturers	228	22,371	46,599	146,256	4,301	288,708	752,763	470,669	40,148	334,467	508,990
15 Rubber products industries	104	16,841	36,264	129,768	11,892	307,075	722,610	410,137	25,656	217,255	446,771
16 Publishing and printing	644	14,793	25,969	130,791	4,819	159,717	680,114	316,348	31,394	270,220	514,985
17 Feed industry	731	5,443	11,854	33,861	8,223	321,007	667,028	389,060	38,808	59,973	163,889
18 Men's clothing factories	462	31,463	64,170	145,951	1,987	321,865	601,101	289,295	36,138	191,563	295,855
19 Women's clothing factories	598	27,703	54,099	125,099	1,257	346,000	601,101	289,295	31,088	160,420	269,440
20 Plastics fabricating industry, n.e.s.	590	27,703	40,093	112,648	9,332	280,722	594,482	309,526	27,444	135,332	316,063
21 Wire and wire products manufacturers	265	13,497	28,927	106,578	6,734	290,000	560,593	281,988	17,651	149,148	269,349
22 Miscellaneous metal fabricating industries	488	16,269	33,082	105,787	7,247	268,348	557,552	289,516	20,504	166,185	300,412
23 Bakeries	1,768	19,075	39,272	109,174	11,490	241,396	540,371	289,709	29,059	184,101	303,802
24 Manufacturers of electrical industrial equipment	176	14,590	30,382	104,445	4,537	230,578	525,868	297,712	26,571	223,898	337,155
25 Fruit and vegetable canners and preservers	215	10,628	21,998	59,200	5,713	210,161	523,353	205,487	11,607	76,330	253,357
26 Household furniture manufacturers, n.e.s.	667	21,233	45,233	117,900	4,215	238,409	492,510	253,712	25,072	153,250	226,368
27 Aircraft and aircraft parts manufacturers	96	13,979	29,123	120,333	4,478	188,736	486,948*	293,733	23,497	220,516	302,369
28 Breweries	42	5,676	11,552	54,976	5,911	121,536	486,770	358,528	9,976	103,929	368,431
29 Manufacturers of industrial chemicals (organic), n.e.s.	35	5,323	11,456	57,891	48,438	232,933	483,330	199,900	9,892	119,602	207,941
30 Manufacturers of pharmaceuticals and medicines	141	5,837	11,973	38,888	3,441	145,629	462,677	317,481	14,345	128,313	340,141
31 Miscellaneous paper converters	231	10,784	22,613	71,256	4,772	236,610	455,020	212,992	16,177	123,950	230,739
32 Fabricated structural metal industry	156	12,498	26,537	118,026	4,085	198,631	450,448*	247,728	17,113	162,600	271,583
33 Fish products industry	350	17,479	33,941	74,849	6,654	269,302	444,494	177,400	20,100	98,900	271,589
34 Distilleries	29	3,272	7,126	29,855	6,314	128,364	322,712	322,712	5,958	57,599	335,706
35 Miscellaneous chemical industries, n.e.s.	348	7,534	15,914	53,290	6,982	211,779	433,667	211,752	14,053	120,134	243,667
36 Manufacturers of electric wire and cable	35	6,640	14,421	54,474	4,009	269,884	432,628	161,132	9,003	81,310	184,831
37 Tobacco products manufacturers	17	5,721	10,698	47,036	1,683	185,811	421,424	234,276	8,118	73,890	238,105
38 Soft drink manufacturers	363	5,778	12,302	38,078	6,882	193,669	412,921	212,287	13,671	105,624	233,573
39 Manufacturers of industrial chemicals (inorganic), n.e.s.	90	5,306	11,525	50,226	39,694	156,005	401,051	204,783	8,761	86,788	244,203
40 Manufacturers of major appliances	33	9,504	19,180	66,679	3,429	231,239	396,522	171,490	12,794	97,384	190,868
Total, 40 leading industries	15,875	726,005	1,523,459	5,607,210	801,665	21,792,443	38,478,604	16,053,711	1,036,223	8,799,775	17,255,227
Total, all manufacturing industries	31,553	1,213,106	2,547,609	8,763,104	1,078,916	31,137,946	56,234,663	24,314,751	1,676,130	13,414,609	26,031,664

¹Data compiled according to the 1970 revision of the Standard Industrial Classification.

*Value of production.

17.7 Summary statistics of manufactures, by province, 1971 and 1972

Province or territory and year	Estab-lish-ments No.	Manufacturing activity			Cost of fuel and elec-tricity \$'000	Cost of materials and supplies used \$'000	Value of shipments of goods of own manu-factory \$'000	Value added \$'000	Total activity		Total value added \$'000
		Production and related workers	Man-hours paid '000	Wages \$'000					Total employees Number	Salaries and wages \$'000	
Newfoundland	1971 245	10,399	21,826	55,284	12,320	130,987	261,931	121,019	12,580	72,757	135,496
	1972 246	10,043	21,353	59,859	12,888	139,770	284,095	129,558	12,179	78,076	142,910
Prince Edward Island	1971 153	1,795	3,698	7,527	1,010	38,748	58,024	20,153	2,290	10,464	22,384
	1972 141	1,786	3,562	7,979	926	44,113	66,888	22,578	2,264	11,101	24,755
Nova Scotia	1971 795	24,253	49,988	129,170	26,348	481,528	798,152	297,754	31,958	188,792	311,757
	1972 761	25,918	53,627	152,571	29,078	598,767	953,641	368,833	34,730	227,674	388,587
New Brunswick	1971 609	22,053	47,065	123,853	34,843	497,389	806,806	280,416	28,565	173,118	296,802
	1972 601	22,967	48,368	136,863	40,222	590,511	965,046	359,037	29,640	191,231	356,528
Quebec	1971 10,135	366,198	774,113	2,171,882	310,623	7,513,331	13,833,179	6,054,856	508,591	3,459,043	6,406,236
	1972 10,025	377,802	798,993	2,401,306	310,623	8,195,973	15,091,616	6,676,036	517,878	3,761,198	7,020,532
Ontario	1971 12,740	563,864	1,183,045	4,020,624	455,775	14,250,680	26,270,629	11,596,471	800,047	6,326,544	12,537,204
	1972 12,589	583,932	1,232,655	4,507,383	491,741	16,020,243	29,225,025	12,869,823	821,614	6,989,621	14,050,099
Manitoba	1971 1,356	35,527	73,345	207,031	27,627	788,264	1,344,855	534,472	48,325	310,760	558,920
	1972 1,322	37,683	77,207	235,681	28,602	894,262	1,509,334	599,867	50,602	347,465	629,514
Saskatchewan	1971 723	10,177	21,478	69,461	12,166	356,713	578,039	209,965	14,578	103,147	217,941
	1972 709	11,061	23,358	80,436	13,244	390,490	646,510	244,772	15,370	117,754	257,447
Alberta	1971 1,821	36,517	76,158	251,644	30,953	1,297,115	2,080,617	755,246	51,941	384,480	785,347
	1972 1,818	38,138	79,741	282,246	33,947	1,550,492	2,425,341	849,515	54,194	433,327	885,500
British Columbia	1971 3,302	96,827	197,279	781,068	109,416	2,301,671	4,235,968	1,864,409	129,308	1,099,080	1,912,561
	1972 3,315	103,597	208,362	897,391	117,451	2,709,384	5,020,254	2,212,050	137,237	1,255,357	2,272,210
Yukon Territory	1971 15	66	133	426	24	1,253	2,285	1,035	77	514	1,074
	1972 11	37	74	241	35	666	1,516	795	59	425	871
Northwest Territories	1971 14	134	292	1,081	134	3,700	5,432	1,719	144	1,200	2,158
	1972 15	142	309	1,150	160	3,276	5,395	1,886	163	1,381	2,712
Canada	1971 31,908	1,167,810	2,448,419	7,819,050	1,000,243	27,661,379	50,275,917	21,737,514	1,628,404	12,129,897	23,187,881
	1972 31,553	1,213,106	2,547,609	8,763,104	1,078,916	31,137,946	56,234,663	24,314,751	1,676,130	13,414,609	26,031,664

17.8 Summary statistics of manufactures, by census metropolitan area, 1971 and 1972

Census metropolitan area and year	Establishments No.	Manufacturing activity				Cost of fuel and electricity used \$'000	Cost of materials and supplies \$'000	Value of shipments of goods of own manufacture \$'000	Value added \$'000	Total activity	
		Number	Man-hours paid '000	Production and related workers	Wages \$'000					Number	Salaries and wages \$'000
Calgary, Alta.	1971	10,892	22,636	77,276	6,699	341,762	576,878	227,082	227,082	16,171	123,422
	1972	11,330	23,448	85,481	7,654	414,964	670,911	248,603	248,603	15,889	127,920
Chicoutimi - Jonquière, Que.	1971	7,992	15,013	61,338	11,118	184,011	352,669	157,147	157,147	10,709	89,367
	1972	7,537	16,018	66,970	11,080	189,880	364,931	164,851	164,851	10,104	94,957
Edmonton, Alta.	1971	15,187	31,587	109,540	14,737	518,647	867,007	331,585	331,585	22,303	171,607
	1972	15,842	33,206	122,038	15,622	620,119	999,218	372,284	372,284	22,168	181,930
Halifax, NS	1971	1,566	4,798	10,117	2,833	160,882	256,498	95,865	95,865	7,574	52,432
	1972	1,411	4,777	10,058	2,864	177,516	285,214	105,535	105,535	6,787	50,287
Hamilton, Ont.	1971	50,546	104,871	399,291	52,508	1,174,260	2,370,030	1,144,944	1,144,944	69,471	592,480
	1972	66,919	106,908	438,837	56,548	1,300,773	2,578,962	1,229,376	1,229,376	67,019	605,465
Kitchener, Ont.	1971	33,364	69,583	218,302	13,456	590,658	1,158,252	558,889	558,889	43,701	311,959
	1972	35,955	74,925	253,014	15,288	709,978	1,333,198	645,127	645,127	46,085	350,223
London, Ont.	1971	19,661	40,159	137,332	8,564	768,995	1,169,270	393,944	393,944	28,148	218,884
	1972	21,430	44,872	166,905	9,644	893,227	1,379,938	446,694	446,694	29,071	244,250
Montreal, Que.	1971	198,025	413,426	1,185,762	86,834	4,317,364	7,868,522	3,492,906	3,492,906	297,137	2,118,870
	1972	202,040	425,516	1,291,491	86,875	4,523,895	8,370,021	3,802,021	3,802,021	271,883	1,975,235
Ottawa - Hull, Ont., Que.	1971	12,762	26,940	90,464	18,535	221,414	476,791	234,746	234,746	20,045	158,161
	1972	12,629	26,690	96,473	17,878	243,751	510,346	258,075	258,075	19,239	159,500
Quebec, Que.	1971	17,545	36,814	104,074	12,765	267,430	566,318	286,998	286,998	23,772	159,558
	1972	18,034	37,531	116,257	14,003	393,954	717,835	318,398	318,398	23,096	160,777
Regina, Sask.	1971	3,131	6,591	23,047	3,963	121,319	198,239	74,347	74,347	4,842	36,887
	1972	3,335	7,099	27,066	4,135	127,835	217,451	86,746	86,746	4,835	40,032
Saint John, NB	1971	5,015	10,727	33,598	8,931	202,089	307,879	99,131	99,131	6,607	46,383
	1972	5,439	11,505	39,227	10,425	260,986	380,348	115,142	115,142	6,936	52,048
St. Catharines - Niagara, Ont.	1971	30,416	65,191	254,891	38,853	597,513	1,260,263	625,698	625,698	40,006	352,600
	1972	30,036	64,117	268,678	41,402	640,022	1,358,507	674,940	674,940	38,897	366,485
St. John's, Nfld.	1971	1,800	3,835	10,479	1,644	28,500	60,959	31,292	31,292	2,668	17,178
	1972	1,890	4,007	11,228	1,629	32,323	68,394	34,470	34,470	2,540	16,469
Saskatoon, Sask.	1971	2,829	5,920	18,934	2,550	100,551	157,820	53,651	53,651	4,133	29,373
	1972	2,954	6,191	20,666	2,597	115,251	176,366	59,794	59,794	4,144	28,982
Sudbury, Ont.	1971	8,193	16,497	68,549	32,752	46,093	226,093	147,254	147,254	11,501	104,557
	1972	6,769	13,632	59,337	25,264	40,834	194,184	128,194	128,194	9,977	96,731
Thunder Bay, Ont.	1971	5,186	10,402	38,752	15,057	110,120	235,470	113,753	113,753	6,485	50,242
	1972	5,649	11,676	47,014	15,730	120,949	251,189	112,671	112,671	6,300	59,025
Toronto, Ont.	1971	218,004	457,472	1,484,030	95,247	5,320,512	9,810,460	4,419,814	4,419,814	333,833	2,612,045
	1972	226,004	475,178	1,662,242	108,228	6,073,398	11,056,419	4,969,585	4,969,585	338,346	2,601,294
Vancouver, BC	1971	49,121	99,835	378,599	27,210	1,199,777	2,167,753	950,984	950,984	69,852	580,861
	1972	50,894	102,212	419,969	29,803	1,356,158	2,427,071	1,052,690	1,052,690	67,145	584,714
Victoria, BC	1971	212	3,430	7,210	1,255	65,846	127,877	61,197	61,197	4,775	39,008
	1972	216	3,623	7,432	1,365	73,534	147,771	72,125	72,125	4,987	43,626
Windsor, Ont.	1971	26,475	57,499	245,906	16,848	1,111,044	1,874,404	754,405	754,405	34,375	240,793
	1972	26,993	60,795	277,103	17,074	1,268,483	2,064,505	787,556	787,556	34,499	251,760
Winnipeg, Man.	1971	28,764	59,518	166,932	10,867	641,745	1,088,019	433,285	433,285	40,122	259,164
	1972	30,275	62,458	188,824	11,421	722,791	1,222,709	496,777	496,777	40,132	273,016

*Indicates change in census metropolitan area boundaries since the preceding year.

17.9 Establishments in the manufacturing industries, by number employed and by province, 1972

Province or territory	Number employed									Total
	Under 5	5 to 9	10 to 19	20 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 or over	
Newfoundland	—	122	30	33	29	—	30	—	2	246
Prince Edward Island	67	21	—	42	6	—	5	—	—	141
Nova Scotia	246	150	123	119	62	23	28	—	10	761
New Brunswick	192	93	94	96	48	45	25	5	3	601
Quebec	2,968	1,632	1,575	1,776	991	581	353	107	42	10,025
Ontario	3,519	2,008	2,060	2,156	1,175	860	574	161	76	12,589
Manitoba	457	197	218	216	109	74	40	—	11	1,322
Saskatchewan	308	146	101	82	41	21	—	10	—	709
Alberta	629	368	315	260	123	78	36	—	9	1,818
British Columbia	1,261	584	489	488	197	146	118	19	13	3,315
Yukon Territory and Northwest Territories	—	17	—	9	—	—	—	—	—	26
Canada	9,753	5,232	5,039	5,243	2,781	1,854	1,190	319	142	31,553

17.10 Number of establishments in manufacturing industries, by industry group and employment size group, 1972

Industry group	Establishments with total employment of									Total
	Under 5	5 to 9	10 to 19	20 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 or over	
Food and beverage industries	1,624	1,104	930	816	408	276	168	38	13	5,377
Tobacco products industries	—	3	—	—	7	—	11	—	6	27
Rubber and plastics products industries	136	89	152	140	79	47	33	—	18	694
Leather industries	—	129	65	94	67	62	26	—	—	443
Textile industries	209	126	153	163	82	75	76	17	9	910
Knitting mills	26	30	40	76	59	49	28	3	—	311
Clothing industries	386	—	599	573	317	196	—	80	—	2,151
Wood industries	1,212	436	444	—	750	137	95	—	11	3,085
Furniture and fixture industries	1,112	321	217	247	130	93	35	3	—	2,158
Paper and allied industries	46	—	—	—	586	—	—	—	22	654
Printing, publishing and allied industries	1,601	786	583	427	183	79	45	—	21	3,725
Primary metal industries	43	—	93	89	—	106	41	23	18	413
Metal fabricating industries (except machinery and transportation equipment industries)	—	1,892	755	738	315	184	—	133	3	4,020
Machinery industries (except electrical machinery)	168	128	169	211	118	84	—	83	—	961
Transportation equipment industries	—	485	—	165	98	—	156	—	54	958
Electrical products industries	87	83	—	350	—	96	—	119	18	753
Non-metallic mineral products industries	331	—	479	229	107	71	41	—	10	1,268
Petroleum and coal products industries	—	63	—	—	9	17	10	3	—	102
Chemical and chemical products industries	—	420	193	202	141	89	57	—	23	1,125
Miscellaneous manufacturing industries	—	2,161	—	—	141	64	40	—	12	2,418

17.11 Establishments and shipments in the manufacturing industries, by shipments per establishment, 1961 and 1972

Value group	1961				1972			
	Estab- lish- ments No.	Value of shipments of goods of own manufacture \$'000	Average per estab- lish- ment \$'000	Pro- portion of total ship- ments %	Estab- lish- ments No.	Value of shipments of goods of own manufacture \$'000	Average per estab- lish- ment \$'000	Pro- portion of total ship- ments %
Up to \$24,999	9,245	106,779	12	0.5	3,861	52,628	14	0.1
\$ 25,000 - \$ 49,999	4,677	168,079	36	0.7	3,497	127,987	37	0.2
50,000 - 99,999	4,562	328,307	72	1.4	4,097	296,242	72	0.5
100,000 - 199,999	4,260	610,675	143	2.6	4,121	594,625	144	1.1
200,000 - 499,999	4,555	1,462,027	321	6.2	5,292	1,718,953	325	3.1
500,000 - 999,999	2,400	1,689,457	704	7.2	3,417	2,439,562	714	4.3
1,000,000 - 4,999,999	2,875	6,123,965	2,130	26.1	5,154	11,551,944	2,241	20.5
5,000,000 and over	783	12,949,667	16,539	55.3	2,114	39,452,724	18,663	70.2
Total and average	33,357	23,438,956	703	100.0	31,553	56,234,663	1,782	100.0

17.12 Establishments in the manufacturing industries, by value of shipments of goods of own manufacture and by province, 1972

Province or territory	Up to \$9,999	\$10,000 to \$24,999	\$25,000 to \$49,999	\$50,000 to \$99,999	\$100,000 to \$199,999	\$200,000 to \$499,999	\$500,000 to \$999,999	\$1,000,000 to \$4,999,999	\$5,000,000 and over	Total
Nfld.	36	26	23	21	27	26	26	53	8	246
PEI	16	21	17	12	18	24	18	14	1	141
NS	52	76	92	109	98	123	82	93	36	761
NB	40	56	73	63	69	95	68	103	34	601
Que.	425	826	1,056	1,256	1,367	1,694	1,141	1,694	566	10,025
Ont.	372	874	1,285	1,544	1,566	2,222	1,417	2,262	1,047	12,589
Man.	76	132	150	184	160	210	148	203	59	1,322
Sask.	64	73	116	114	86	95	68	68	25	709
Alta.	60	163	214	288	276	316	179	220	102	1,818
BC	152	316	466	502	450	482	268	443	236	3,315
YT and NWT	1	4	5	4	4	5	2	1	—	26
Canada	1,294	2,567	3,497	4,097	4,121	5,292	3,417	5,154	2,114	31,553

17.13 Establishments and employment in the manufacturing industries, by number employed per establishment, 1961 and 1972

Size group	Establishments No.	Employees No.	Working owners and partners No.	Proportion of total employment ¹ %
1961				
Under 4 employed	12,352	16,846	10,675	2.0
5 - 9 " }				
10 - 19 " }	15,963	255,757	6,205	19.2
20 - 49 " }				
50 - 99 " }	2,445	169,319	88	12.4
100 - 199 " }	1,377	190,540	17	13.9
200 - 499 " }	869	261,628	4	19.1
500 - 999 " }	243	169,392	—	12.3
1,000 or more " }	108	234,320	—	17.1
Head offices	—	54,733	—	4.0
Total	33,357	1,352,535	16,989	100.0
1972				
Under 4 employed	9,753	14,268	7,118	1.3
5 - 9 " }	5,232	33,256	1,813	2.1
10 - 19 " }	5,039	69,228	574	4.1
20 - 49 " }	5,243	164,009	233	9.7
50 - 99 " }	2,781	194,087	26	11.5
100 - 199 " }	1,854	259,440	17	15.4
200 - 499 " }	1,190	358,844	12	21.3
500 - 999 " }	319	217,196	—	12.9
1,000 or more " }	142	291,718	—	17.3
Head offices	—	74,084	—	4.4
Total	31,553	1,676,130	9,793	100.0

¹Includes working owners and partners.

17.14 Trends in domestic exports of manufactures, 1966-74 (million dollars)

Year	Fabricated materials	End products	Total manufactured goods ¹
1966	4,217.0	2,455.1	6,672.1
1967	4,417.3	3,476.5	7,893.7
1968	5,027.9	4,702.4	9,730.4
1969	5,344.9	5,792.5	11,137.4
1970	6,083.4	6,010.1	12,093.5
1971	6,035.2	6,641.4	12,676.6
1972	6,796.5	7,648.6	14,445.1
1973	8,531.9	8,950.3	17,482.2
1974	10,899.2	9,672.5	20,571.7

¹These categories of exports are only approximately equivalent to exports of manufactured goods.

17.15 Entries, by industry group, 1972 Census of Manufactures

Industry group	Establishments new to the manufacturing sector ¹		Establishments reclassified from other manufacturing industry groups ²		Establishments reclassified within the industry group ²	
	Number	Value of shipments of goods of own manufacture \$'000,000	Number	Value of shipments of goods of own manufacture \$'000,000	Number	Value of shipments of goods of own manufacture \$'000,000
Food and beverage industries	207	105.7	3	5.1	11	43.3
Tobacco products industries	—	—	—	—	—	—
Rubber and plastics products industries	59	17.3	12	18.2	2	^a
Leather industries	11	^a	2	^a	—	—
Textile industries	44	15.3	11	8.0	11	28.2
Knitting mills	12	^a	5	^a	6	^a
Clothing industries	137	30.6	6	1.4	50	12.8
Wood industries	283	100.4	25	14.3	19	5.6
Furniture and fixture industries	145	10.2	13	10.6	32	10.1
Paper and allied industries	28	6.8	7	5.4	4	9.3
Printing, publishing and allied industries	245	31.0	2	^a	43	^a
Primary metal industries	15	^a	5	2.7	2	^a
Metal fabricating industries	185	35.5	33	25.3	123	118.8
Machinery industries	48	26.7	60	93.2	5	1.5
Transportation equipment industries	66	58.5	41	44.6	24	34.2
Electrical products industries	40	52.4	7	10.1	11	7.9
Non-metallic mineral products industries	40	7.3	1	^a	18	^a
Petroleum and coal products industries	5	159.2	—	—	—	—
Chemical and chemical products industries	40	43.8	1	^a	8	^a
Miscellaneous manufacturing industries	168	23.3	19	43.3	2	^a
Total, all industries	1,778	758.5	253	304.2	371	324.9

¹Establishments newly created or reclassified from sectors other than manufacturing.²Establishments reclassified from one manufacturing industry to another because of a change in product mix.³Confidential.

17.16 Exits, by industry group, between the 1971 and 1972 Censuses of Manufactures

Industry group	Establishments disappearing from the manufacturing sector ¹		Establishments reclassified to other manufacturing industry groups ²		Establishments reclassified within the industry group ²	
	Number	Value of shipments of goods of own manufacture \$'000,000	Number	Value of shipments of goods of own manufacture \$'000,000	Number	Value of shipments of goods of own manufacture \$'000,000
Food and beverage industries	429	143.0	—	—	11	43.3
Tobacco products industries	1	^a	1	^a	—	—
Rubber and plastics products industries	32	6.8	6	19.3	2	^a
Leather industries	38	18.5	2	^a	—	—
Textile industries	50	15.7	9	20.5	11	28.2
Knitting mills	24	^a	2	^a	6	^a
Clothing industries	149	38.8	7	3.9	50	12.8
Wood industries	375	112.6	9	2.8	19	5.6
Furniture and fixture industries	147	14.7	20	4.5	32	10.1
Paper and allied industries	15	14.0	6	9.9	4	9.3
Printing, publishing and allied industries	168	59.9	5	3.7	43	^a
Primary metal industries	11	^a	—	—	2	^a
Metal fabricating industries	223	55.7	117	116.7	123	118.8
Machinery industries	51	22.4	14	10.4	5	1.5
Transportation equipment industries	100	41.6	11	37.9	24	34.2
Electrical products industries	47	39.4	12	38.4	11	7.9
Non-metallic mineral products industries	75	14.1	7	1.8	18	^a
Petroleum and coal products industries	4	8.0	—	—	—	—
Chemical and chemical products industries	51	38.6	4	17.4	8	^a
Miscellaneous manufacturing industries	143	37.7	21	8.6	2	^a
Total, all industries	2,133	727.4	253	304.2	371	324.9

¹Establishments no longer in existence or reclassified to sectors other than manufacturing.²Establishments reclassified from one manufacturing industry to another because of a change in product mix.³Confidential.

17.17 Rates of appearance and disappearance of establishments between the 1971 and 1972 Censuses of Manufactures

Industry group	Rate of appearance of new establishments per 1,000 ¹		Rate of disappearance of establishments per 1,000 ¹		Average value of shipments per establishment				Disappearing establishments (1971 data)	
	Rate	Rank	Rate	Rank	All establishments 1971	Rank	New establishments 1972	Rank	\$'000	Rank
Wood industries	89.4	1	118.5	1	742	16	355	8	300	14
Rubber and plastics products industries	88.9	2	48.2	14	1,753	10	293	10	213	18
Miscellaneous manufacturing industries	70.2	3	59.7	9	466	18	139	16	264	15
Transportation equipment industries	68.5	4	103.8	2	7,198	4	886	5	416	9
Printing, publishing and allied industries	67.1	5	46.0	15	453	19	127	17	357	11
Furniture and fixture industries	67.0	6	68.0	7	363	20	70	18	100	20
Clothing industries	63.3	7	68.9	6	688	17	223	13	260	16
Machinery industries (except electrical machinery)	52.6	8	55.9	11	2,044	8	556	6	439	10
Electrical products industries	52.4	9	61.5	8	3,658	6	1,310	3	838	6
Petroleum and coal products industries	49.5	10	39.6	17	20,934	1	31,840	1	2,000	1
Textile industries	48.1	11	54.7	12	1,856	9	348	9	314	13
Metal fabricating industries (except machinery and transportation equipment industries)	44.7	12	53.8	13	853	15	192	14	250	17
Paper and allied industries	43.6	13	23.4	20	6,232	5	243	12	933	5
Knitting mills	37.7	14	75.5	5	1,431	12	258	11	1,429	2
Primary metal industries	37.0	15	27.2	19	9,749	3	2,047	2	945	4
Food and beverage industries	37.0	16	76.6	4	1,627	11	511	7	333	12
Chemical and chemical products industries	35.1	17	44.8	16	2,442	7	1,095	4	757	7
Non-metallic mineral products industries	30.6	18	57.4	10	1,139	13	183	15	188	19
Leather industries	23.4	19	80.9	3	894	14	64	19	487	8
Tobacco products industries	—	20	34.5	18	19,836	2	—	20	1,200	3

¹Per 1,000 establishments the previous year (1971). New establishments include those reclassified from non-manufacturing industries; disappearing establishments, those reclassified to non-manufacturing industries.

17.18 Summary statistics¹ of estates closed during 1972 under the Bankruptcy Act

Item	Province					
	Nfld.	PEI	NS	NB	Que.	Ont.
Bankrupt estates	No.	—	11	30	2,289	2,565
Estates closed	\$'000	—	235	537	48,481	30,937
Assets as estimated by debtors	—	3	482	1,282	85,643	63,364
Unsecured liabilities as estimated by debtors	—	—	37	275	9,735	7,560
Realization by trustee	—	—	21	107	5,421	3,758
Costs of administration	%	—	57	39	56	50
Costs as percentage of realization	\$'000	—	16	168	4,314	3,802
Paid to unsecured creditors	—	—	171	267	27,593	15,220
Retained by secured creditors	%	—	3	13	5	6
Average percentage recovered by unsecured creditors	No.	—	1	—	173	36
Proposals	\$'000	—	191	—	25,147	18,095
Proposals closed	—	—	142	—	2,624	6,975
Unsecured liabilities as estimated by debtors	Man.	Sask.	Alta.	BC	Total	
Paid to unsecured creditors	No.	103	91	203	359	5,652
Bankrupt estates	\$'000	1,492	657	5,412	8,265	96,016
Estates closed	—	3,316	1,780	6,492	12,603	174,965
Assets as estimated by debtors	—	611	146	1,119	1,452	20,935
Unsecured liabilities as estimated by debtors	—	184	77	457	718	10,743
Realization by trustee	%	30	53	41	49	51
Costs of administration	\$'000	427	69	662	734	10,192
Costs as percentage of realization	—	725	151	2,859	4,073	51,059
Paid to unsecured creditors	%	13	4	10	6	6
Retained by secured creditors	No.	2	2	—	6	220
Average percentage recovered by unsecured creditors	\$'000	452	12	—	2,614	46,511
Proposals	—	37	3	—	62	9,843
Proposals closed	—	—	—	—	—	—
Unsecured liabilities as estimated by debtors	—	—	—	—	—	—
Paid to unsecured creditors	—	—	—	—	—	—

¹Excludes Small Debtor Program.

17.19 Estimated liabilities¹ of bankruptcies and insolvencies, 1969-73 (thousand dollars)

Year	Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia	Total
1969	3,137	118,534	51,078	13,208	25,148	211,105
1970	7,346	138,461	76,967	20,998	13,876	257,648
1971	10,591	121,451	97,533	72,223	20,256	322,054
1972	4,292	101,327	94,096	82,941	24,587	307,243
1973	37,578	131,062	86,734	17,396	23,931	296,701

¹Estimated by debtors and therefore to be accepted with reservations.

17.20 Bankruptcies and insolvencies, by industry and economic area, 1973

Industry	Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia	Total	Estimated liabilities \$'000
Primary industries	—	24	50	27	13	114	11,370
Manufacturing	—	111	80	10	16	217	39,920
Foods and beverages	—	5	3	1	—	9	2,346
Textiles	—	3	3	—	—	6	1,461
Clothing	—	28	13	2	—	43	9,592
Wood	—	25	11	—	5	41	5,405
Paper and allied industries	—	18	23	5	4	50	3,759
Primary and fabricated metal, machinery, transportation equipment, electrical products and non-metallic mineral products	—	19	20	1	5	45	13,549
Chemical	—	3	2	—	—	5	1,821
Other industries	—	10	5	1	2	18	1,987
Construction	9	206	259	60	64	598	59,590
General contractors	5	120	146	29	40	340	41,372
Special trade contractors	4	86	113	31	24	258	18,218
Transportation, communications and other utilities	3	65	116	37	32	253	14,193
Trade	19	565	523	107	80	1,294	81,911
Food	5	91	64	26	9	195	8,515
General merchandise	2	26	28	7	1	64	4,751
Automotive products	4	114	108	23	23	272	11,708
Apparel and shoes	3	105	92	10	4	214	11,755
Hardware	—	19	19	7	1	46	2,390
Household furniture and appliances	2	72	66	10	11	161	10,273
Drugs	—	23	5	1	1	30	2,559
Other trades	3	115	141	23	30	312	29,960
Finance, insurance and real estate	1	24	29	2	5	61	63,193
Service	1	197	162	27	22	409	26,524
Education, health and welfare	—	10	5	5	2	22	1,272
Recreational	—	8	12	2	1	23	1,667
Business	—	16	27	1	3	47	3,786
Personal	1	103	72	15	12	203	9,098
Other	—	60	46	4	4	114	10,701
Total, all industries	33	1,192	1,219	270	232	2,946	296,701

Sources

17.1 - 17.17 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada.

17.18 Superintendent of Bankruptcy, Department of Consumer and Corporate Affairs.

17.19 - 17.20 Business Finance Division, General Statistics Branch, Statistics Canada.

Chapter 18

Merchandising and trade

18.1 Merchandising and service industries

This Section deals with the distribution of goods and services which flow from producer to consumer principally through wholesale and retail channels and through service outlets in what is generally known as the marketing process.

Merchandising industries include wholesaling and warehousing (wholesale merchants, agents and brokers, primary products dealers, manufacturing sales branches, petroleum bulk tank plants and truck distributors) and the entire field of retailing including direct selling and automatic vending. Service industries offer a service to consumers, businesses and the professions.

The data on merchandising and service industries are gathered in the course of censuses which are conducted by Statistics Canada every five years, and by means of monthly, annual and occasional surveys. In recent years, a considerable degree of interest has been focused on the service trades, which has resulted in an expanded statistical coverage of that area of activity.

18.1.1 Retail trade

Data for retail trade are collected by Statistics Canada from monthly surveys of all retail chains (four or more stores in the same kind of business under one owner), and of a sample of independent retailers.

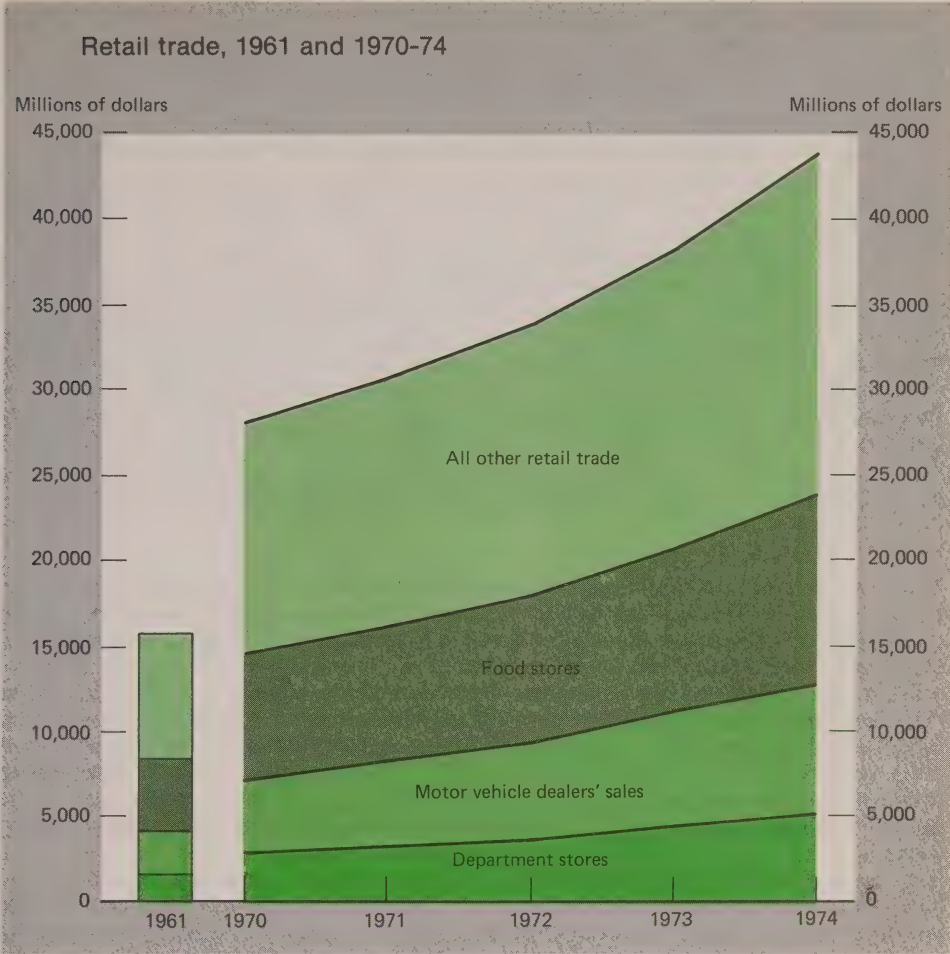
Table 18.1 shows retail trade data from 1970 to 1974 with percentage change for 1970-74. During this period retail sales rose from \$28.0 million to \$43.8 million, an increase of 56.3%. Above average sales increases were recorded by motor vehicle dealers (81.2%), department stores (77.4%) and fuel dealers (73.1%). Among the smallest sales increases recorded were those in variety stores (27.1%), shoe stores (30.3%), men's clothing stores (33.6%), all other food stores (36.1%) and family clothing stores (40.9%). On a provincial level, all provinces showed retail sales increases of well over 50.0%, with Saskatchewan recording the highest increase 73.2%, followed by British Columbia (68.4%), Newfoundland (64.1%) and Alberta (63.3%). Ontario, with an increase of 50.7%, recorded the smallest increase of all the provinces.

Chain and independent stores. A retail chain is defined as an organization operating four or more retail stores in the same kind of business under the same legal ownership. All department stores are classified as "chains" even if they do not meet the foregoing definition. An independent retailer is one who operates one to three stores, even if he is a member of a voluntary group organization.

In some kinds of business such as motor vehicle dealers, service stations and garages, "other food stores" (i.e. excluding grocery and combination stores), and men's clothing stores, independent merchants have maintained a dominant position; in others, such as general merchandise stores and variety stores, chains are dominant. Table 18.2 provides information on the sales trends of chains and independent stores by kind of business in 1970 and 1974 and the percentage change during that period.

From 1970 to 1974 retail sales through chain stores rose by 68.3% and through independent stores by 49.0%.

During this period grocery and combination store chains continued their sales increases (68.9%) at the expense of independent stores (32.3%). Although general store chains were less important than independents, from 1970 to 1974 chains made considerably more headway (99.3%) than independents (46.3%). The dominant chains in the variety stores category showed smaller sales increases (25.4%) than the independents (35.8%) and for the period 1970 to 1974, variety stores were the only category in which the sales increases of the chain segment were less than those of independents. Sales by service stations and garage chains are far less than the total sales by independents in this category but a trend to chains seems to be developing; sales increases of chains compared to those of independents were 177.3% to 35.6% from 1970-74. Men's clothing store chains account for appreciably fewer sales than independent merchants but from 1970 to 1974 chains recorded sales increases of 79.4%



compared with 26.2% for independents. A similar tendency to that of men's clothing stores was observed in shoe store sales. Chains used to account for a smaller proportion of the total, but after a sales increase of 44.8% compared with 17.6% for independents, sales through chains are now greater than those made through independent outlets. A similar increase in the strength of chains can be observed in furniture, television and appliance stores, fuel dealers and drug stores. In each case the sales increase through chains compared to that of independents grew much faster in the period 1970-74.

Table 18.3 illustrates the relative importance of chains by kind of business and the trends from 1966 to 1974. The percentages shown in this Table represent the chains' share of the market and the balance is accounted for by the independents. In 1974 chain stores accounted for 40.7% of the total market (and independent stores for 59.3%) compared to 33.0% in 1966. The largest change occurred in women's clothing stores where chain stores increased their share of the market between 1966 and 1974 from 26.5% to 40.9%, and also in grocery and combination stores where chains increased their market share from 44.9% in 1966 to 57.5% in 1974. Service station and garage chains almost tripled their share of the total revenue from 3.4% in 1966 to 11.0% in 1974. Only in all other food stores, motor vehicle dealers, variety stores and furniture, TV and appliance stores did the chains fail to make progress at the expense of independent operators. However, it is important to remember that independent stores still account for nearly 60% of all retail sales in Canada and that they have yielded their dominant position only recently in shoe stores and in grocery and combination stores.

Department stores. Department stores have shown the most consistent and substantial growth of all categories of retail trade. Sales are exceeded only by grocery and combination stores and by motor vehicle dealers. In 1966 department store sales represented 8.7% of total retail trade; by 1974 they had increased their market share to 11.5% with total sales of \$5,059 million, excluding catalogue sales.

Sales through department stores were 77.4% higher in 1974 than in 1970. The rate of growth among the various departments within department stores has not been consistent although the nine or 10 departments which dominated sales in 1970 continued to dominate sales in 1974.

In 1970-74 above average increases of over 100.0% were recorded in eight departments within department store sales (Table 18.4). The highest increase was recorded in jewellery (118.8%) followed by major appliances (118.0%), plumbing (115.8%), furniture (110.3%), stationery, books and magazines (109.1%), hardware (103.9%), women's and misses' sportswear (102.8%) and sporting goods and luggage (101.5%). Also eight departments within department store sales recorded sales of well over \$200 million, the highest of which was furniture \$282.2 million, followed by major appliances \$274.3 million, food and kindred products \$254.9 million, women's and misses' sportswear \$250.8 million, men's clothing \$242.0 million, toiletries, cosmetics and drugs \$232.1 million, television, radio and music \$232.0 million and men's furnishings \$220.8 million. The lowest increase in sales was recorded in women's and girls' hosiery (6.6%) while the lowest sales of any department was in millinery, \$15.3 million.

New motor vehicle sales. The largest homogeneous group of commodities sold through retail trade outlets is "new motor vehicles". In 1974, the \$5,917 million sales of new motor vehicles accounted for 77.8% of all retail sales of motor vehicle dealers and 13.5% of total retail sales amounting to \$43,829 million.

Statistics Canada obtains new motor vehicle sales data monthly from both Canadian manufacturers and importers. These respondents supply data on both unit sales and dollar sales. Users of the unit data however should be aware that they differ from data available from other sources, such as "factory shipments" and "registrations", owing to variations in definition and treatment of "new vehicles" in relation to "demonstrators", sales to the Canadian Armed Services, semi-finished imports, sales of motors and chassis to coach body-builders, etc.

The new motor vehicles referred to in this context are the passenger cars, trucks and buses sold by motor vehicle dealers to the public. Excluded, consequently, are all export sales and domestic sales of motorcycles, snowmobiles and other all-terrain vehicles. Passenger cars include not only private cars but taxis and car rental fleets, and other passenger cars used for business and commercial purposes; commercial vehicles refers solely to trucks and buses. Overseas manufactured vehicles include only those imported (some by Canadian and US manufacturers) in a fully assembled state from countries other than the United States. When assembled on this continent some well-known "foreign" makes of cars and trucks are treated statistically as being Canadian and US manufactured vehicles.

During 1974 total retail sales of new motor vehicles increased for the fourth successive year to a new record of 1.2 million units valued at \$5,917 million (Table 18.5). In this year however there was a marked deceleration in the annual rate of growth when compared with preceding years. For units, the latest increase of 1.8% compares poorly with the 15.1% of last year, 13.3% in 1972 and 21.5% in 1971; and for values of sales, the increase of 10.2% is less than half the growth rates of 24.5%, 21.4% and 26.3% for the comparable three previous years.

Total expenditure on new passenger cars during the year increased 4.7% to \$4,017 million for 942,797 units, 2.9% fewer than last year. In diminishing nine percentage points, from 77% in 1971 to 68% in 1974, the market share of passenger car sales, as a percentage of total motor vehicle sales, was yielding both to the pressures of a strong surge in commercial vehicle sales, particularly those of North American manufacturers as well as a slackened demand for passenger cars.

Passenger cars manufactured in Canada and the US fared far better in the Canadian market than imported passenger cars. Receipts for the former rose 8.1% over the previous year to a record \$3,455 million for 796,840 vehicles, 1.8% more than in 1973 (Table 18.6). Passenger car imports from Japan however dropped 15.6% in value over the year to \$301

million from \$357 million in 1973. Unit sales also decreased, by 21.4%, from 111,467 in 1973 to 87,609 in the latest year. In 1974, 114,576 Japanese passenger car units were purchased for \$336 million. European passenger cars sales also declined over the year, by 7.3% in value, from \$281 million to \$261 million; in units, they shrank 23.7% from 76,447 in 1973 to 58,348 in 1974. In 1972, 90,450 European passenger car units were purchased for \$279 million.

Sales of commercial vehicles produced in North America held up very well in all provinces during the year, particularly in the Prairie region. In total, a record of 287,686 vehicles were sold in Canada, up 22.2% from last year, for a 24.9% increase in receipts which rose to \$1,832 million. Imported commercial vehicles accounted for only 3.6% of this segment of the motor vehicle market. Sales of these vehicles also declined during 1974, in units by 7.8% to 18,821 and receipts by 0.3%, fetching \$68.6 million in the latest year.

Campus book stores. Retail trade statistics are collected annually from book stores located on the campuses of universities and other post-secondary educational institutions. Owing to their location and the highly seasonal nature of their business, campus book stores are not included in the census of merchandising and services, nor are they included in the monthly estimates of retail trade. Consequently, a separate survey is conducted to provide data. In the 1973-74 academic year, 216 campus book stores had net sales of \$50 million, a 13.2% increase over the previous academic year. Of the total dollar sales, 66.3% was accounted for by textbooks, 10.7% by trade books, 15.0% by stationery and supplies and 8.0% by sales of miscellaneous items (Table 18.7).

Non-store retailing. Consumer goods, in addition to being sold in retail stores, often reach the household consumer through other, more direct, channels of distribution. These channels are characterized by the fact that the commodities handled bypass the retail outlet completely in moving from primary producer, manufacturer, importer, as wholesaler or specialized direct seller, to the household consumer. The Merchandising and Services Division conducts periodic, usually annual, surveys of two distinct forms of non-store retailing: merchandise sales through vending machines and sales by manufacturers and distributors specializing in direct-sales methods, such as catalogue and mail-order sales and door-to-door canvassing, house-parties, etc.

Vending machine sales. This survey is designed to measure the value of merchandise sales made through automatic vending machines owned and operated by independent operators and subsidiaries or divisions of manufacturers and wholesalers of vended products. Excluded from coverage are the sales through many thousands of vending machines (vending commodities such as cigarettes, beverages, confectionery, etc.) owned and operated by retail stores, restaurants and service stations as these sales statistics are usually inextricable from data collected during other surveys.

During 1973, the 648 operators of the 104,253 vending machines covered by this survey, reported sales of \$207 million, including \$2.5 million from 26,155 "bulk confectionery" machines (Table 18.8). These sales exceeded by 15.7% the sales of \$179 million reported in 1972. As Table 18.9 indicates, increased sales through the following principal types of machines were chiefly responsible for the over-all advance in receipts between 1972 and 1973: cigarette machine sales which expanded 14.1% to gross \$99.7 million; coffee machine sales which rose 13.4% to a total of \$32.0 million and soft drink machine sales which increased 7.5% to account for \$31.2 million. Notable gains in sales were also recorded for packaged confectionery, pastry and snack food machines, whose receipts rose 15.4% to \$18.0 million; fresh food dispensing machines whose sales rose by 30.4% to \$12.1 million; packaged milk (and juice) machines with receipts up 55.9% to \$6.5 million and hot canned food and soup machines which increased sales by 21.8% to reach \$3.4 million in 1973.

Of the 77,230 full-size vending machines (excluding the small "bulk confectionery" machines) on location at year-end 1973, 38.4% were placed in industrial plants, 22.5% were placed in hotels, motels, taverns, restaurants, etc., while 14.6% were placed in institutions, such as hospitals, schools, colleges, etc.

Special surveys for the years 1972 and 1973 determined that 27,014 machines were sold in Canada by manufacturers and importers for \$16.3 million in 1973 compared with the sale of 24,547 machines valued at \$14.1 million a year earlier. Major sales in the latest year were 4,637 cigarette machines which sold for \$3.3 million, 1,883 coffee machines which sold for \$2.3 million and 8,897 soft-drink machines which sold for \$6.9 million.

Direct selling. The public is familiar with this method of merchandising through the house calls of canvassers selling a wide range of products. The products sold, and their sales (shown in brackets) are as follows: cosmetics and costume jewellery (\$101.6 million); household electrical appliances including vacuum cleaners (\$62.7 million); dinnerware, kitchenware and utensils (\$38.7 million); household cleaners, brushes, brooms and mops (\$26.1 million); and books (\$23.1 million). Other sales made at the doors of household consumers were home-deliveries of bread, milk and dairy products (\$233.3 million) and newspapers (\$128.1 million).

"Door-to-door" selling is the best known of the various channels of "direct selling" and accounted for 63.4%, or \$655.8 million, of the total consumer expenditure of \$1,034.1 million (Tables 18.10 and 18.11) spent on direct sales in 1973, in addition to the \$38,239.2 million spent through regular retail outlets.

Sales made by "mail-order" are another mode of direct selling by which specialized retailers contact the household consumer. In 1973 total sales amounted to \$154.7 million, accounting for a further 15.0% of all direct sales and made up chiefly of books (\$48.9 million); newspaper and magazine subscriptions (\$34.2 million); phonograph records and tapes (\$23.3 million) and a wide range of household appliances, books, binoculars, cameras, jewellery, watches, radios, etc., purchased by credit-card holders of gasoline oil companies (\$20.6 million). It should be noted that these figures of mail-order purchases do not include data on foreign mail-order sales made to Canadians or the mail-order sales of Canadian department stores.

Other methods of direct selling which bypass the regular retail outlet and which are included in the \$1 billion total sales figure mentioned above are the sales made from showrooms and premises of manufacturing companies and primary producers (\$189.9 million) and the miscellaneous sales made from temporary roadside stands and market stalls, at exhibitions and shows, and purchases of meals and alcoholic beverages on airlines, ferries and railways (\$33.6 million).

18.1.2 Sales financing and consumer credit

Sales financing. Ancillary to the retailing industry are the financial institutions which facilitate consumer instalment purchases, particularly of the more expensive variety of consumer durables, such as automobiles and household appliances. Separate statistics have long been maintained by Statistics Canada on the retail instalment financing undertaken by the sales finance industry, especially their participation in the financing of automobile purchases. The firms classified to this industry in these statistics are the independent sales finance companies, the sales finance company subsidiaries of car, truck and farm implement manufacturers and the sales financing business of consumer loan companies.

Not included in these statistics are the instalment sales financing done by acceptance companies which are the subsidiaries of, or which are associated exclusively with, large retailing organizations. The sales financing activity of this type of company is regarded as an extension of the merchandising function, and their statistics are included with the accounts receivable reported by department stores and other retail merchandising establishments. At year-end 1974 about a dozen such acceptance companies reported accounts receivable of \$1,065 million, for purchases of consumer goods through their associated retail outlets.

By year-end 1974 the sales finance industry, as delineated above, held outstanding balances of \$3,020 million covering the retail instalment financing of both consumer goods (\$1,198 million) and commercial and industrial goods (\$1,822 million) (Table 18.12). In the course of the year they had augmented their purchases of new finance paper by \$2,530 million, \$1,104 of consumer goods' paper and \$1,426 of commercial and industrial finance paper.

Since 1970 the composition of the portfolios of sales finance companies has shifted from a preponderance of consumer goods paper to a marked emphasis on commercial and industrial goods financing (from 46% of the total in 1970 to 60%). While still active in the financing of passenger car sales, holding balances of \$1,222 million at year-end 1974, the sales finance companies have yielded an increasing share over the years to the chartered banks which now hold balances of \$2,969 million.

Consumer credit. Consumer credit arises through an advance of cash, or value received as goods or services, or through use of credit cards, by firms extending such credit to individuals for non-commercial purposes in exchange for a promise to pay at a later date — generally by

instalments which include interest and other finance charges. These statistics on consumer indebtedness exclude fully secured loans, home-improvement loans and long-term indebtedness such as residential mortgages. Statistics are not available on certain other forms of consumer credit, such as inter-personal loans, bills owed to dentists and other professional practitioners, to clubs or other personal service establishments. In March 1970 a Statistics Canada survey showed that consumer credit accounted for 24% of all personal indebtedness, residential mortgages for 68% and other miscellaneous debt accounted for the remaining 8% (Catalogue No. 13-547).

The Merchandising and Services Division of Statistics Canada maintains a consolidated statistical series on consumer credit extended to Canadians by selected financial institutions and other holders of these balances. The component statistics of these national estimates are supplied by the Bank of Canada, the Superintendent of Insurance, as well as by this and other divisions of Statistics Canada. At the present time data are available only at the national level for most series except the chartered banks for which provincial data are published in the Bank of Canada's *Monthly Review*.

At the end of 1974, the total amount of consumer credit outstanding in Canada reached \$20,606 million, a net increase during the year, after repayments on previous balances, of \$2,918 million, or 16.5% (Table 18.13). The personal disposable income of consumers in 1974 was \$88,105 million, a rise of 16.0% over the previous year, of which they spent \$79,633 million, an increase of 15.3% over 1973, on consumer goods and services, saving the remainder. A decade ago total consumer credit outstanding amounted to 18.9% of the \$33,049 million disposable income available to consumers in that year. Since then this percentage has gradually increased to 23.1% by year-end 1974.

Since 1954 there have been some significant shifts in "market share" among the institutions serving the needs of consumers for credit. At that time almost a third, 32.1% of all consumers' credit requirements were furnished by retail vendors — department stores, furniture stores and other retail outlets — historically, the earliest providers of consumer credit. Other major groups of suppliers of credit two decades ago were the sales finance and consumer loan companies which extended a further third of the total credit, mostly to finance automobile purchases, with the banks and credit unions and caisses populaires contributing almost an additional quarter, 23.6% of the amount. By 1964 retail trade outlets had lost over 12 percentage points in "market share" falling to 19.7%, while the chartered banks had expanded their share by the same amount to reach a 28.7% share. The share of sales finance and consumer loan companies had by then shrunk slightly to 31.0% but that of the credit unions and caisses populaires had increased to 11.3%. At the present time the chartered banks have gained pre-eminence in this field, holding over half, 52.5% of all outstanding balances; the share of credit unions and caisses populaires has also increased, to 13.7% but sharp declines in share have been experienced by the retail trade sector, which has shrunk to 10.5% and by sales finance and consumer loan companies whose share has halved since 1964 to 14.6%.

18.1.3 Service trades

Service trades generally encompass those businesses which perform a service and in which the sale of goods constitutes only a minor function. Service trades are classified generally into six principal groups: amusement and recreational services (movie theatres, bowling alleys, billiard parlours, health clubs, etc.); personal services (barber shops, beauty parlours, laundry and dry cleaning, laundromats and shoe repair shops); restaurant services (restaurants, take-out food shops, and other eating and drinking places); miscellaneous services including photographers, automobile and truck rentals and driving schools; services to business such as lawyers, accountants, computer services, consultants, advertising agencies, and media representatives; accommodation services which include hotels, motels and tourist camps. Not included under service trades are educational services, health services, real estate operations and financial services. It should also be noted that automotive services such as garages and other repair shops are covered under retailing.

Traveller accommodation. Table 18.14 summarizes the major types of accommodation in 1972. Total accommodation receipts in 1972 were \$1,708.0 million, of which hotels accounted for the major share, 80.6%, with total receipts of \$1,376.7 million. Receipts reported by motels totalled \$220.9 million (12.9%) and the remaining \$110.4 million (6.5%) was accounted for by tourist homes, tourist courts and cabins, outfitters and tent and trailer campgrounds. Total

receipts include such source items as sales of rooms, food, alcoholic beverages, merchandise and other services provided by traveller accommodation business i.e. telephone, valet, laundry, parking, etc. A further breakdown of traveller accommodation data by province is provided in Table 18.15.

Restaurants. Data for restaurants are collected from a sample of independent restaurant operators and from a full coverage survey of chain restaurants. Independent restaurants which hold a franchise are classed as independents. Restaurants in hotels are generally excluded from restaurant statistics and included with hotels.

Receipts in the 1970-74 period rose 45.3% nationally and ranged from a low of 25.5% in Nova Scotia to a high of 55.9% in Newfoundland (see Table 18.16 for the provincial breakdown). Independent restaurant operations accounted for 85.5% of the total restaurant receipts in Canada.

Franchising in the food-serving industry. Franchising is a system of distribution in which one enterprise grants to another the right to merchandise a product or service. A full coverage survey of franchising in Canada's food-serving industry was conducted in 1973 as a follow-up to a pilot survey carried out for 1971. In 1973, 42 franchising companies operated in Canada, covering 1,970 franchisee and franchisor owned/operated business outlets with gross sales of \$379.7 million. This represented 24.3% of Canada's total estimated restaurant sales in 1973 (or 27.2% of sales from independent restaurant operators).

Power laundries, dry-cleaning and dyeing plants. In 1973 a total of 2,532 power laundries, dry-cleaning and dyeing plants operated in Canada with a revenue of \$282.4 million, an increase of 9.5% from \$258.0 million in 1972. Of these plants, 339 were laundries, with a revenue of \$132.7 million, and 2,193 were dry-cleaning and dyeing plants with receipts totalling \$149.7 million. In 1973 power laundries maintained their revenues in the past few years and in 1972 showed a 16.4% increase in revenue over the previous year while the revenue of dry-cleaning and dyeing plants increased by 4%.

Motion picture distribution and production. This industry consists of exhibitors who operate regular movie theatres and drive-in theatres, film distributors, and private firms and government agencies engaged in the production of motion picture films.

Total receipts from admissions in 1973 were \$150.6 million, of which \$129.9 million were obtained by regular theatres and \$20.7 million by drive-in theatres. There were 1,135 regular theatres and 299 drive-in theatres in operation in Canada.

The average admission price was \$1.80 in regular theatres (ranging from a low of \$1.11 in the Yukon and Northwest Territories to \$1.92 in Ontario) and in drive-in theatres it was \$1.79. The per capita expenditure reached a high of \$8.30 in 1953, then gradually declined to a low of \$3.91 in 1962, increasing gradually to reach its present level of \$7.32.

The number of paid admissions in regular motion picture theatres reached a high in 1952, then declined gradually until 1963; after an increase in 1964, admissions continued to decline again until 1970. A slight increase was recorded for 1972; however another decline was recorded in 1973 (see Table 18.17). The trend of paid admissions in drive-in theatres was somewhat different. These reached a high in 1954, after which they declined quite rapidly for a couple of years. From 1957 to 1965 the number of admissions fluctuated around the 10 million mark. Ticket sales increased after that, reaching 12.3 million in 1968. After 1968, the number of admissions declined again. The number of admissions to both kinds of theatre has not kept pace with the rising population, and, at the present time, seems to have stabilized at around 90 million a year. In 1973 the average utilized seating capacity was computed to have been only 15% in Canada as a whole. Smaller centres have higher capacity utilization than larger centres.

In 1973, 68 firms distributed films through 126 offices in Canada. Total receipts increased by 6.4% to \$76.1 million in 1973 from \$71.6 million in 1972. Revenue from the rental of films for theatrical use amounted to \$50.8 million, representing 67.2% of total receipts. Revenue from the rental of films for television accounted for 26.3% and the remaining 6.5% came from the rental of film for other uses. In 1973, 953 new films were distributed, compared with 801 in 1972. New feature films numbered 811 and included 402 English, 319 French, and 90 films in other languages. Of the 811 new feature films, 356 came from the US, 137 from France, 83 from Italy, 61 from Britain, 33 from Canada and 141 from other countries.

Motion picture production in 1973 was undertaken by 143 private firms reporting a gross revenue of \$24.6 million. A total of 3,778 original motion picture films were reported by private firms (3,498) and government agencies (280); of these, 2,279 were motion picture and television commercials. In total, 963 television and theatrical motion pictures other than commercials were produced — 156 for theatre showing and 807 for television. The remaining 536 films were for instruction, training, tourism and information.

Advertising agencies. In 1973, 189 advertising agencies reported gross billings of \$586.2 million (Table 18.18). This does not represent the total expenditure on advertising in the country since much advertising is not produced or placed by and through advertising agencies. Among the expenditures not generally channelled through advertising agencies are classified advertisements in newspapers, and a certain amount of catalogue and direct mail advertising. Of the total gross billings, \$193.4 million was in print media (newspapers, weekend roto magazines, consumer magazines, trade papers, yellow pages, farm publications, etc.), \$192.2 million in television, \$63.0 million in radio, \$13.9 million for outdoor and transportation, \$16.9 million for direct mail and \$3.7 million for other media.

Total media billings amounted to \$462.5 million, production charges accounted for another \$114.6 million and \$9.0 million was for market research surveys and other services. From 1970 to 1973 gross billings increased by 24.7%. Total advertising billings, which comprise the expenditure on time and space as well as production costs, increased by 24.9%; total media billings, i.e. expenditure on space and time alone, increased by 24.9%; production costs by 24.0%; and expenditures on market research surveys and other expenditures increased by 18.7%. During this time, the share of total media billings of print media dropped from 43.1% to 41.8%, while that of television increased from 38.4% to 41.5%; radio declined from 15.2% to 13.6% and outdoor media almost maintained their share showing a decline from 3.3% to 3.0%.

Computer service industry. In 1973 a survey of the computer service industry revealed that 331 companies in Canada provided computer services involving 303 computers of various capacities, 828 terminals and 2,174 access ports. Total operating revenue amounted to almost \$590 million of which "hardware" sales and rentals accounted for \$377 million, processing for \$139 million, "software" for \$36 million and equipment maintenance, education and other services for \$38 million.

Of the total operating revenue, \$98 million or 16.6% was generated from computer services provided to financial institutions, \$81 million or 13.7% from manufacturing firms, and \$65 million or 11.0% for primary industries (mining, logging, fishing, etc.). A variety of other businesses and institutions account for the remainder.

Funeral directors. A survey of funeral directors was undertaken for the year 1972 as a follow-up to a similar program taken in 1968. A total of 1,256 firms were included in the program reporting total receipts of \$119.5 million. Provincial distributions of number of firms, total receipts and average funeral costs are presented in Table 18.19.

Non-commercial services. Statistics Canada has recently embarked on a program of coverage for the non-commercial services sector of the economy. This area is defined as encompassing various religious organizations; non-profit amusement and recreation services; non-profit lodging houses and residential clubs; industrial, trade and professional associations; fraternal organizations and service clubs; political, community and civic organizations; as well as other membership organizations engaged in non-commercial activity.

Preliminary data for religious organizations for 1971 show that there were 25,547 religious organizations with charitable status having revenue in excess of \$587 million and expenditure in excess of \$542 million (Table 18.20). Data for other segments of the non-commercial sector are not yet available.

18.1.4 Wholesale trade

In the field of wholesale statistics a program of upgrading has been implemented which includes biennial coverage of the wholesale merchants type of operation beginning in 1973 and agents and brokers in the intervening years. As well as producing more up-to-date statistics on these two types of operation, the results, in the case of wholesale merchants, will be used as the base for a new sample of monthly sales and inventory estimates.

Wholesalers are primarily engaged in buying merchandise for resale to retailers; to industrial, commercial, institutional and professional users; to farmers for farm use; to other wholesalers; or acting as agents in connection with such transactions. Businesses engaged in more than one activity, e.g. wholesaling and retailing or wholesaling and manufacturing, are considered to be primarily in wholesale trade if, and only if, the greater part of their gross margin (the difference between the total sales and the cost of goods sold) is due to their wholesaling activity.

Wholesale trade statistics give a measure of the total volume of Canadian wholesale trade, i.e. the total volume of trade (domestic and export sales) conducted by all wholesalers operating in Canada, whether they are Canadian-owned or subsidiaries of foreign companies. The total volume of trade measured by Statistics Canada cannot be equated with the value of goods passing through the wholesale sector of the economy because at times wholesale businesses sell to each other and thus the value of the same merchandise may be recorded more than once.

According to certain common characteristics each wholesale establishment and location (wholesale outlet) is assigned to one of the following types of operation: primary product dealers (grain, livestock, raw furs, fish, leaf tobacco, pulpwood, etc., including co-operative marketing associations); wholesale merchants (buying and selling goods on own account); agents and brokers (buying and selling goods for others on a commission basis); manufacturers' sales branches (wholesale businesses owned by manufacturing firms for marketing their own products); or petroleum bulk tank plants and truck distributors (wholesale distribution of petroleum products).

Wholesale merchants, one of the main types of operation, accounting for about 60% of the total wholesale volume of trade had estimated sales in 1974 of \$43,210 million up by 26.8% from the 1973 volume of \$34,081 million. Consumer goods trades accounted for \$18,866 million of the 1974 total volume of trade while the remaining \$24,344 million is in industrial goods trades, which showed an accelerated growth for the year of 35.7% as compared with the consumer group of 16.9%. Data for 1972-74 are given in Table 18.21.

Farm implement and equipment sales. Data are collected annually from manufacturers and importers active in the farm implement and equipment field. Dollar sales are reported at dealers' buying price before the deduction of dealers' cash discounts, value of trade-ins, volume or performance bonuses and export sales are excluded. The value of repair parts is excluded from Table 18.22 but their dollar value in 1974 of \$143.0 million was 33.3% greater than the \$107.3 million reported for 1973.

Farm equipment sales reached a low point in 1970 but in subsequent years have been showing a steady recovery. The two most important products were farm use tractors with a sales volume of \$212.5 million, representing 37.0% of the total sales volume of \$573.9 million, and harvesting machinery with sales of \$114.1 million or 19.9% of all farm implement and equipment sales in 1973.

Construction machinery and equipment sales include sales by Canadian distributors, direct sales by manufacturers to end-users (at actual final selling price) and revenue derived from the renting of equipment to users. In 1973 new machinery entering the market (by outright sale, first lease or rental) was valued at \$1,067.8 million, 31.6% above 1972 (Table 18.23). The sale of used machinery rose by 37.5% from \$129.8 million in 1972 to \$178.5 million in 1973. Rental income increased 31.8% from \$81.1 million to \$106.9 million. Of the \$1,067.8 million, \$330.9 million was accounted for by repair and consumable parts. The largest single item in terms of dollar sales was crawler-type tractors: 3,016 units entered the market for a value totalling \$148.3 million. Sales of new equipment by distributors totalled \$969.7 million, while sales by manufacturers amounted to \$98.1 million.

Diesel and natural gas engine sales. In 1973, 20,787 diesel engine units were sold in Canada for a total of \$176.2 million. In addition, 11,026 engine units were exported or re-exported with a value of \$55.8 million. In 1973, 784 natural gas engines were sold in Canada for a value of \$5.8 million.

18.1.5 Co-operatives

In 1973 the gross business volume of Canadian co-operatives reached \$3,565 million, \$773 million or 28% more than in the previous year. Part of the increase resulted from higher

prices due to inflation. Grain marketings rose almost \$300 million or 36% and other farm product marketings were also up. Supply sales climbed at the unusually high rate of 30%. Service revenue and other income recorded a combined gain of 22% for the year. Dollar totals for the four broad categories of co-operative business volume were: farm product marketings, \$2,265 million; supply sales, \$1,187 million; service revenue \$84 million; and other income, \$28 million.

Co-operatives covered here exclude recreational (community halls and rinks, etc.), financial (credit unions) and those run by native peoples. Those included are classified by their primary function into four main groups: marketing and purchasing (the largest), service, fishermen's and wholesales. The service group is frequently subdivided into service and production. Production co-operatives provide services directly related to agricultural production such as artificial breeding, or are directly involved in production such as co-operative farming. The first three groups are known as "local" co-operatives since they deal directly with individual members; the wholesale co-operatives perform wholesaling functions for the locals.

Assets of the locals increased by \$170 million or 13% during the year with most of the growth going into inventories, receivables and property and equipment. The number of reporting associations rose slightly during the year with the incorporation of some new service co-operatives in Alberta and Quebec outweighing the downward trend in most of the other provinces. Membership totals rose almost 100,000 with large gains in British Columbia because of health insurance (service co-operatives) and in Quebec where there were new incorporations of a wide variety of service co-operatives and a growing membership in student supply and food co-operatives.

In 1973 marketing and purchasing co-operatives experienced a 28% gain in business volume compared to 18% in 1972. The dollar increase was \$749 million and brought total volume up to \$3.42 billion (Table 18.24). All provinces and all revenue categories contributed to the rise in business activity. Saskatchewan volume passed the billion dollar mark for the first time. Farm product marketings of the marketing and purchasing co-operatives advanced by \$468 million or 27% slightly ahead of the rise in over-all farm cash receipts which came to 25% (Table 18.25). Grain provided three fifths of the increase; dairy volume climbed a moderate 8% in line with the continuing over-all dairy trend of lower production and higher prices. British Columbia, Alberta and Nova Scotia dairy co-operatives made substantial increases in their market share during the year. Fruit and vegetable revenues to co-operatives rose about 20% with some good crops in British Columbia and Nova Scotia at a time of higher prices due to crop shortages in some countries. Livestock returns increased by 29% in the period with unusually high prices for hogs and cattle. Poultry and egg co-operatives benefited from higher poultry meat consumption and higher prices for poultry and eggs. New facilities in Ontario and additional marketing operations acquired in Manitoba and Nova Scotia aided poultry and egg volumes. Egg prices came under the over-all responsibility of the Canadian Egg Marketing Agency in June 1973. Miscellaneous marketings increased about two thirds for the year. Honey, maple, wool and fur marketings all benefited from higher prices while tobacco and forest products volumes decreased.

Marketing and purchasing co-operatives had another good year of supply sales in 1973. Machinery, feed, and fertilizer sales rose at rates of 50%, 48% and 42%, respectively. Machinery outlets experienced a second straight year in which availability of supply was about the only restriction on volume as producers in times of high farm receipts hastened to upgrade and replace outmoded and depreciated production facilities. Feed sales climbed sharply in eastern Canada and British Columbia as farmers with lower crops purchased increased tonnages at almost doubled prices. Fertilizer sales responded to greatly accelerated demand from farmers striving to increase production in the face of world-wide food shortages. The remaining sales categories rose at various rates on rising demand accompanied by inflating prices.

Business revenues of the production co-operatives increased to \$55 million in 1973, a gain of \$9 million or 19%, with Alberta contributing four fifths of the gain. Livestock marketings of feeder co-operatives in Alberta and Saskatchewan climbed at rates of 27% and 18%, respectively. Artificial breeding co-operatives provided the rest of the increase in revenues. Assets of \$40 million were almost \$5 million more than at the beginning of the year. The number of associations was 356 and membership equalled 29,000, a drop of 4,000.

The other service co-operatives had a parallel rise in business activity of \$9 million or 23% in 1973 reaching a total of \$47 million. The co-operative dental insurance program in British Columbia reached new volume levels for a second year and attracted thousands of new members. Quebec revenues rose with the inclusion of a number of newly reported associations involved in housing and such diverse activities as restaurants, printing and telephones. In Alberta and Ontario several types contributed to the uptrend including rural electric, gas utilities and seed cleaning in the former, and medical insurance, transportation and housing in the latter. Assets of the service associations amounted to \$134 million at year-end, up 18%. The number of associations and reported membership rose substantially to 711 and 306,000 respectively.

Fishing co-operatives from all the provinces shared in a second straight year of rising business volume to reach \$46 million. The gain was \$6.5 million or 16% and was mostly due to higher prices brought on by a world shortage of fish and fish substitutes. Assets rose 30% in the period to \$27 million. The number of associations rose from three to 72 while membership came to 7,000.

Wholesale business volume reached the billion dollar mark for the first time to \$1,043 million in 1973, a gain of 25%. Supply sales increased 31% while marketings registered a more moderate increase of 12%. Feed sales experienced a 62% gain as wholesales struggled to meet the accelerated demand of livestock feeders caught with less than adequate grain crops in their areas. Fertilizer sales also recorded exceptional gains while hardware, machinery and building materials continued in very high demand. Food, clothing, petroleum and miscellaneous all rose in line with more prosperous business conditions. Wholesale co-operatives' share of the fruit and vegetable sector declined but all of their other farm product marketings expanded in the year, including livestock, poultry, grain, dairy and fish. Wholesale assets grew by 17% to \$299 million in the period.

18.1.6 Control and sale of alcoholic beverages

The retail sale of alcoholic beverages in Canada is controlled by provincial and territorial government liquor control authorities. Alcoholic beverages are sold directly by most of these liquor control authorities to the consumer or to licensees for resale. However, in some provinces, beer and wine are sold directly by breweries and wineries to consumers or to licensees for resale. During the year ended March 31, 1973, provincial government liquor authorities operated 1,361 retail stores and had 310 agencies in smaller centres of population.

Table 18.26 shows the value and volume of sales of alcoholic beverages in the years ended March 31, 1972 and 1973. It should be noted that the value does not always represent the final retail selling price of alcoholic beverages to the consumer because, when sold to licensees, only the selling price to licensees is known. Volume of sales is a more realistic indicator of trends in consumption although, as a measure of personal consumption by Canadians, it is subject to the same limitations as the figures of value sales and includes, in addition, purchases by non-residents.

Government revenue specifically related to alcoholic beverages, and details of sales by value and volume for each province are given in Table 18.27. A Statistics Canada publication, *The control and sale of alcoholic beverages in Canada* (Catalogue No. 63-202) shows further detail as well as volume figures of production and warehousing transactions, the value and volume of imports and exports and the assets and liabilities of provincial liquor commissions.

18.2 International trade

Canadian foreign trade statistics are compiled from information recorded on customs documents received by Statistics Canada from customs ports, supplemented with energy data obtained through other channels. Trade figures reflect the physical movements of goods across Canada's national and customs boundaries but do not always represent the financial transactions for changes in ownership of these goods.

Coverage. Total Canadian exports are the sum of domestic exports and re-exports. Domestic exports include shipments abroad of goods wholly produced in Canada together with exports of previously imported goods which have been changed in form by further processing in Canada. Re-exports or exports of foreign produce include only goods previously included in import statistics which are exported from Canada in the same form as when imported. Minor operations such as cleaning, sorting and repacking are not considered as changing the

condition of imported goods. Since the introduction in January 1964 of the "General trade" system of compilation, re-exports have also included outward movements of goods previously imported but stored in customs warehouses.

Imports, as from January 1964, include all goods cleared by customs immediately on arrival in Canada together with goods that are entered into customs warehouses. For earlier years, imports under the "Special trade" system of presentation included goods cleared immediately on arrival plus goods cleared for consumption out of customs warehouses. This meant that those goods which crossed the national boundary into and out of customs warehouses without crossing the customs boundary were excluded.

Since January 1960 certain commodities have been excluded from both export and import trade statistics but have been published monthly under "Special transactions — non-trade". Besides gold, this category includes commodity movements which either have no international commercial or financial implications or are better considered as non-merchandise transactions in the statistics of Canada's balance of international payments. These are: settlers' effects; private donations and gifts; tourist purchases; goods shipped back and forth across the national boundary by the diplomatic and military personnel of Canada posted abroad and of foreign countries in Canada; temporary movements for exhibition or competition, including films for processing; bunker supplies and stores sold to foreign vessels or aircraft in Canada or purchased by Canadian carriers abroad; and generally, all temporary exports and imports and goods merely moving in transit through Canadian territory.

Other goods crossing the customs frontier without change of ownership, as exemplified by goods exported or imported on a lease or rental basis, are also excluded from trade statistics. The practice in Canadian statistical compilation is to include all processing trade at full value rather than to record only the value added to the goods through processing. In the case of repair and improvement trade the practice, however, has been to include only the added value of the repair work.

Valuation. Export documents define the valuation to be used as f.o.b. (free on board) place of lading, i.e. point of production for the majority of commodities, Vancouver and St. Lawrence ports for grain and oil seeds and the latter for iron ore. The value of goods imported is usually the value as determined for customs purposes based on the fair market value or the selling price, whichever is higher. For entries exceeding \$50,000 in value, however, the selling price is, with certain exceptions, compiled. In the majority of cases, import documents define the valuation to be used as f.o.b. points of shipment in the country of export; however, where importers report c.i.f. (cost, insurance, freight), care is taken to compile f.o.b. values.

Classification. Beginning with statistics for January 1961 and January 1964, detailed commodity statistics for exports and imports, respectively, have been compiled according to revised classifications, on the basis of the Standard Commodity Classification developed by Statistics Canada as a tool for integrating statistical series derived from different sources. The revised classifications place commodities in sections mainly according to stage of processing and purpose, as follows: Live animals; Foods, feed, beverages and tobacco; Crude materials, inedible; Fabricated materials, inedible; End products, inedible; and Special transactions, trade. Previously, commodities were classified primarily according to the material of which they were chiefly composed. This remains the criterion of the Standard International Trade Classification, approved in 1960 by the United Nations Economic and Social Council. Convertibility indexes are available to convert Canadian classifications to the SITC at a detailed level of five digits.

Trade is classified to countries on the basis of consignment. Exports are considered to be consigned to the country to which they are shipped when they leave Canada, i.e. the farthest known destination. Imports are classified to the country from which goods are shipped to Canada, except for goods produced in Central or South America but consigned to Canada from the United States; these goods are credited to the country of origin.

Statistics are compiled and presented for some 150 individual countries, arranged primarily according to geographical location, but also grouped because of common political heritage and tariff arrangements, such as Commonwealth and preferential countries, and of economic links, such as the European Economic Community.

Discrepancies in trade statistics between Canada and other countries. Canada's statistics of exports are rarely in exact agreement with the import statistics of its customers and parallel

differences occur with Canadian imports. Major factors contributing to these discrepancies include: differences in the system of valuation used by Canada and those of other countries, with respect to the treatment of transportation charges, fair market and transaction values; differences in the statistical treatment of special categories of trade, such as military supplies, government-financed gifts of commodities, postal and express shipments, tourist purchases, bunker and warehouse trade; differing definitions of territorial areas; differing systems of crediting trade by countries, notably the consignment system used by Canada and the actual origin or ultimate destination system in use in some other countries; and differences in the time at which trade is recorded in the statistics of partner countries caused by the time required for goods to move from one country to another.

Table 18.28 summarizes total international trade for selected years 1956-74. In 1956 Canada's imports exceeded exports by \$760 million. The deficit persisted until 1960. Since then, a favourable balance of trade has been maintained, although with marked fluctuations between some years. The excess of exports over imports reached a high of \$2,868 million in 1970, and declined irregularly to reach a low level of \$526 million in 1974.

18.2.1 Geographic regions

Table 18.29 shows the importance to the Canadian economy of trade with the US. Exports to that country in 1961 made up 54% of the total, to the UK 15.8%, to other Commonwealth and preferential countries 5.7%, and to all other countries 24.5%. By 1974 exports to the US had increased by 11.9 percentage points, while those to the UK decreased by 9.8 percentage points and to other Commonwealth and all other countries by 2.2 and 0.1 points, respectively. At 67.3% in 1974, the proportion of Canadian imports from the US was only fractionally above the share in 1961, but increased from 17.2% to 25.1% for "other countries" while easing to 3.6% and 4.0% for the United Kingdom and other Commonwealth and preferential countries over the 13-year period. Within the "other countries" group of countries, Japan with 6.9% and the original EEC countries with 6.5% had become important export destinations by 1974. The latter countries and Latin America each supplied about 5.8% of Canada's imports.

Values of total exports and imports, by geographic region and country for 1972-74, are shown in Table 18.30. In the last two years the United States, Japan, United Kingdom, the Federal Republic of Germany and Italy comprised Canada's main export destinations in order of rank.

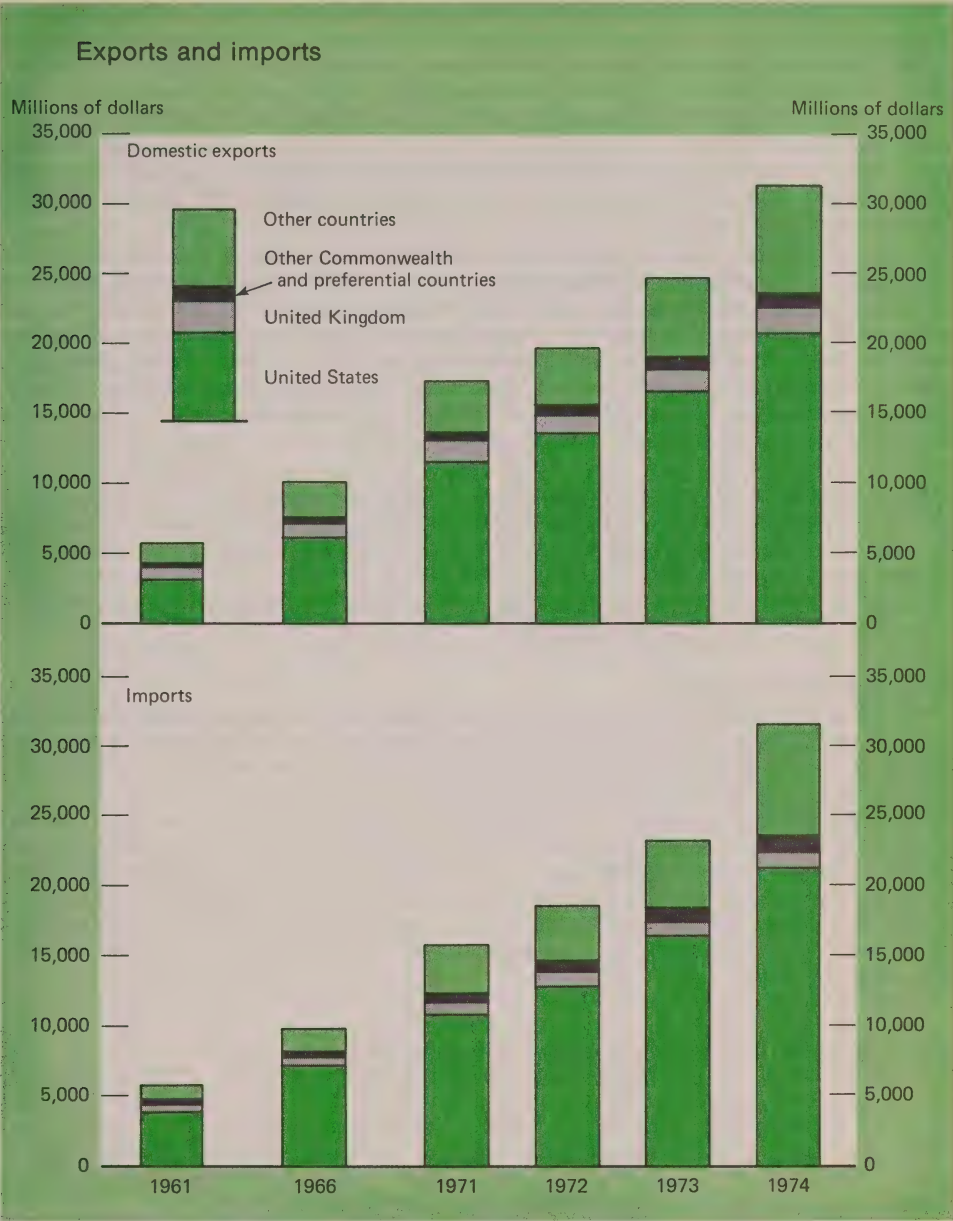
In 1974 Venezuela displaced the United Kingdom as the third important source of imports, owing to soaring prices of crude petroleum. The Federal Republic of Germany was next in rank and was followed by Iran, again on account of crude oil imports.

Ranking export growth from 1970 to 1974 by geographic region, the Middle East and Other Asia were first, with annual rates exceeding 25%. The growth rates of exports to the United States and Western Europe were estimated at 18% and 11%, respectively. Crude oil contributed to the ranking of import growth for the five-year period. In first place was the Middle East (90%), followed by Other Africa (31%), and Other America (31%). The annual rates of growth of imports from the United States and Western Europe were 21% and 18%, respectively.

18.2.2 Commodities

Detailed information on the composition of Canada's domestic exports for 1973 and 1974 is given in Table 18.31. In the case of trade with the United States, animals, food, feed, beverages, tobacco, metals, minerals, crude petroleum, natural gas, softwood lumber, pulp and newsprint, which in 1974 accounted for 44% of exports to that country, were responsible for 62% of the export expansion over 1973. By contrast, motor vehicles and related products made up about 26% of Canadian exports in 1974, but a mere 4.5% of American export growth, on account of the energy shortage and recessionary situation in the United States. In export trade with other countries, animals, food (notably cereals), feed, beverages, tobacco, oil seeds, crude metals and minerals represented 54% of 1974 exports and 49% of the export gain.

Table 18.32 gives details of Canada's imports for 1973-74. In transactions with the United States, motor vehicles and related products maintained their important share of imports, at 30%, although down from 33% in 1973. Imports of machinery and communication and other equipment accounted for a further 14% and 12%, respectively. These commodity groups



represented 44% of the over-all increase between the two years. In trade with countries other than the United States, food, feed, beverages, tobacco and other crude and fabricated materials made up 63% of total imports in 1974 and 81% of the import rise to overseas countries. Due to soaring prices, crude oil imports alone represented 25.5% of all purchases from overseas countries and 48.5% of the increase over 1973. Automotive imports from overseas countries rose some 20% in 1974.

18.2.3 Section and stage of fabrication

Tables 18.33 and 18.34 present historical series of Canada's external trade for selected years 1956-74 by section and stage of fabrication, i.e. crude and fabricated materials and end

products. Crude materials include live animals and other natural products not processed beyond cleaning or preparation for shipment, such as fresh fruits and vegetables and raw sugar. Fabricated materials in Section 2 include food, feed, beverages and tobacco, commercial feed and commodities that are further processed. End products comprise prepared pet food and commodities used directly for consumption, such as cheese, canned foods, whisky, cigars and cigarettes. Sections 3 and 4 represent the body of crude and fabricated materials respectively. Included in Section 5 (inedible end products) are finished commodities that have attained their final degree of processing, e.g. machinery together with specific parts and accessories of machinery.

Exports. In 1974, exports and imports reached record high levels of \$32,100 million and \$31,500 million respectively. Canada's exports followed a steady upward trend over the period 1956-74. The acceleration in the growth of domestic exports in the period 1961-66 was followed by somewhat slower growth during the next five-year period. Exports of finished goods recorded much higher rates of increase than those of crude and fabricated materials. Exports increased more rapidly to the United States than to all other countries. Domestic exports by section and stage of fabrication, 1956-74 are presented in Table 18.33; average annual rates for major categories are given in Table 18.35.

Imports. At 10%, imports rose at a slightly slower rate than exports over the same period, 1956-74, with hesitations in growth in the second half of the 1950s and in 1970. The sharpest acceleration in the growth rate of imports occurred in the period 1971-74, which was preceded by years of more moderate growth. Values of imports are shown in Table 18.34 and percentage growth rates in Table 18.35.

Unlike export trade, the growth of imports from the United States has been at a slightly lower rate than from overseas countries.

18.3 Federal trade services

Canada's economy continues to be vitally dependent on international trade. Competition among industrial nations is intense and increased exports are not easy to achieve. A successful export trade can only be assured by combining good products, efficient production and aggressive, intelligent marketing with government support.

Federal government support is provided through the Department of Industry, Trade and Commerce and the Export Development Corporation. The Department assists Canadian industry throughout the complete cycle — from research, design and development through production to marketing of the finished product. The Export Development Corporation, a Crown agency which reports to Parliament through the Minister of Industry, Trade and Commerce, provides insurance, guarantees, loans and other financial facilities to help Canadian exporters.

18.3.1 Department of Industry, Trade and Commerce

Departmental units involved in international trade are: Office of General Relations, Office of Special Import Policy, Export and Import Permits Division, the International Bureaux, Trade Commissioner Service, Office of International Special Projects, International Financing Branch, Grain Marketing Office, Office of Transportation Policy Adviser, Office of Export Programs and Services, and the Program Office (Export Market Development), which handles the administration of the Program for Export Market Development.

The Office of General Relations includes a General Trade Policy Branch and a Commodity Trade Policy Branch, responsible, within the Department, for formulating and implementing Canadian external trade policy with particular reference to the activities of the General Agreement on Tariffs and Trade (GATT), the Organization for Economic Co-operation and Development (OECD) and the United Nations Conference on Trade and Development (UNCTAD). It is also responsible for the preparation and conduct of negotiations of intergovernmental commodity agreements, such as those for wheat, coffee and sugar.

The Office of Special Import Policy implements government policies relating to low-cost imports. It proposes action to be taken by government in the light of recommendations of the Textile and Clothing Board (with respect to imports of textiles and clothing) and of the Anti-dumping Tribunal (with respect to other low-cost products), as well as in other instances

where low-cost imports have caused or are threatening serious injury to domestic production. It conducts bilateral restraint negotiations with other governments and implements special measures of protection by means of import controls when required. It is also responsible for the conduct of international textile negotiations within the GATT and participates in the work of the Textiles Surveillance body established under the Arrangement regarding International Trade and Textiles.

The Export and Import Permits Division is responsible for all matters relating directly or indirectly to commodity control measures under the authority of the Export and Import Permits Act and the United Nations Rhodesia Regulations. The purpose of the Act is to ensure, by means of export controls, that there is an adequate supply and distribution in Canada of goods necessary for defence or other purposes; that no specified goods having a strategic nature will be made available to any destination wherein their use might be detrimental to the security of Canada; that an intergovernmental arrangement or commitment is implemented; that any action taken to promote the further processing in Canada of a natural resource that is produced in Canada is not rendered ineffective by reason of the unrestricted exportation of that natural resource; and, that the export of any raw or processed material that is produced in Canada in circumstances of surplus supply and depressed prices is limited or kept under surveillance.

By means of import controls, the Act is also intended to ensure an adequate supply in Canada of goods that are scarce in world markets, or subject to governmental controls in the countries of origin or to allocation by intergovernmental arrangement; to implement action taken under certain other specified federal acts; and to implement an intergovernmental arrangement or commitment. Other functions of this Division are to advise exporters and importers on interpretation and requirements of the Export Control, Area Control and Import Control Lists and Regulations; to study the economic implications of the Act; and to review Control Lists and practices.

The International Bureaux (European Bureau, Pacific, Asia and Africa Bureau, and Western Hemisphere Bureau) provide the central departmental points of contact on matters affecting Canada's trade and economic relations with other countries and areas. The Bureaux are centralized sources of information on Canada's trade with specific countries or regions and they provide a regional perspective for matters of both international trade relations and export trade development. Their responsibilities include: developing Canada's international trade strategy and programs for individual countries and areas; maintaining and improving access for Canadian products to export markets through negotiation of trade agreements with other countries and consulting on trade relations and trade problems at the official level with foreign governments. They also provide information, advice and guidelines to government agencies and to the business community on foreign governments' trade and economic regulations and practices; maintain contact, normally through Canadian posts abroad, with foreign markets and foreign governments on matters pertaining to markets for Canadian exports; and provide advice to the Department, to other Canadian government agencies and to the Canadian business community on export market problems and opportunities.

The Trade Commissioner Service has 88 trade offices in 63 different countries. Its primary role is to promote Canada's export trade and to represent and protect its commercial interests abroad. Accordingly, a trade commissioner is called upon to perform a wide variety of tasks: to act as an export marketing consultant; to bring foreign buyers into contact with Canadian sellers; to help organize trade fairs and trade missions in his territory; to recommend modes of distribution and suitable agents; and to report on changes in tariffs, exchange controls and other matters affecting Canada's trade with the countries to which he is accredited. He initiates programs to develop new markets for Canadian products, responds to inquiries from Canadian firms and provides advice on assistance to the Canadian exporter visiting his territory. In addition, he acts on behalf of the foreign programs of a number of federal government departments and undertakes agricultural reporting at specified posts. For a Canadian firm wishing to develop a market in his territory, the trade commissioner can supply information on product usage, if any, local production and import data, and prospective users or agents where appropriate.

The scheduled return of trade commissioners for official tours of Canada is an effective means of assisting Canadian firms interested in the export trade, and trade associations are

informed in advance of these visits so that appointments can be arranged for discussions with firms interested in exporting to his territory. Businessmen wishing to meet with trade commissioners on tour may arrange to do so by communicating with the Trade Commissioner Service, trade associations, or one of the Department's regional offices.

The Office of International Special Projects consists of two branches: the Defence Programs Branch and the Special Projects Branch, which develop certain types of special export opportunities by promoting Canadian industrial participation in projects and programs abroad. Many of these export opportunities are capital projects requiring goods and services from several sources of supply, no one of which can normally undertake the lead in exploiting such a project. This Office attempts to provide the special government assistance needed to co-ordinate the efforts of all concerned.

The Defence Programs Branch promotes defence export trade through marketing programs aimed at the sale of Canadian defence and defence-related high-technology equipment to friendly countries, and the establishment of arrangements with Canada's allies for co-operative industrial research, development and production in defence-related matters. A major activity is the Canada-United States defence-development and production-sharing program, which entails the joint development and reciprocal procurement of defence items.

The Special Projects Branch identifies and exploits opportunities for capital projects abroad having multi-industry content, including those related to airports, tourism, education, health care and agro-industries abatement; provides marketing assistance to service industries, particularly by providing a focal point in the Department for consulting engineers; and co-ordinates departmental marketing activities in the promotion of Canadian participation in projects financed by multilateral and bilateral aid sources such as the World Bank and regional development banks.

The International Financing Branch participates in the development of policies and procedures for external aid, export credits and other export financing arrangements. In addition, it keeps Canadian exporters informed about the range of financing facilities provided by the Canadian government and those available through international financial institutions.

The Grain Marketing Office is concerned with the federal government's activities in marketing assistance and development for grain, oilseeds and their bulk derivatives. Its continuing operational responsibility includes the institution and administration of programs designed to expand exports of grain, oilseeds and other products and to help provide stability in the market. Among these are initial prices legislation, grain credit facilities and Prairie grain advance payments. It follows developments in grain markets and sales opportunities. It also seeks to widen the market for these products through commercially viable projects by working with commercial firms, agencies and associations within the industry. The office participates in the activities of international organizations concerned with grain and oilseeds such as the International Wheat Council and the Food and Agriculture Organization of the United Nations.

The Office of the Transportation Policy Adviser is concerned with the transportation environment and with short- and long-term transportation problems that affect Canadian trade and industrial development. Continuing reviews are made of freight rates and services to shippers, and of regional, national and international transportation policies and measures that have an impact on Canadian trade, and assistance is provided to shippers in selecting appropriate transportation routes and modes at lowest possible freight costs. The Branch participates in national and international organizations and conferences concerned with cargo movement, intermodal transport, simplification of documentation and facilitation of trade procedures, and international maritime development.

The Office of Export Programs and Services administers the trade support given by the Department under the Promotional Projects Program (PPP) and the Program for Export Market Development (PEMD).

Through the PPP, Canadian trade fair exhibits, trade missions and trade visits are initiated, organized and managed by the Department. The range of these activities includes participation in international trade fairs, solo shows and in-store promotions; the organizing of technical seminars and trade missions abroad; and the sponsoring of foreign visits to Canada to stimulate the sale of Canadian products in various export markets. The Department also

provides promotional publicity and specially designed exhibit settings for the trade fair participants.

Missions and technical seminars vary in type depending on the objective but, in general, out-going missions are used for market investigation and evaluation and identification of technical market access problems, while incoming missions are designed to invite foreign government or company representatives, who can influence buying, to inspect the industrial capacity and technical capabilities of Canadian firms and the products and services they can supply. Technical seminars are used to acquaint potential buyers with Canadian expertise and technology in specific fields. The Promotional Projects Program includes planned provision to take advantage, at short notice, of foreign market opportunities which cannot be foreseen by bringing trade delegates, buyers and export oriented trainees to Canada.

In contrast to the PPP, project initiatives under PEMD come from Canadian industry rather than the government. The objective is to develop and sustain exports of Canadian goods and services. To this end, the Department is prepared to make repayable contributions toward a company's costs in developing export business — costs that otherwise might discourage such an attempt. There are several sections in PEMD, each of which is designed to deal most effectively with a particular market, in terms of the regions, products and marketing techniques concerned. In all sections, companies are encouraged to develop self-sustaining export markets for their products. Section A deals with Canadian participation in capital projects abroad; Section B with the export of Canadian products and services; Section C with participation in trade fairs outside Canada; Section D with bringing foreign buyers to Canada and Section E with the formation of export consortia.

18.3.2 Office of Tourism

The Canadian Government Office of Tourism was reorganized in late 1973. The Office now has three branches that report to the Assistant Deputy Minister, Tourism: Marketing, The Demand Side; Industry Development, The Supply Side; and Policy Planning and Industry Relations, The Strategy Side. Through the Deputy Minister, he advises the Minister of Industry, Trade and Commerce on policy and operational matters relating to tourism in Canada. He also represents federal government interests in domestic and international tourism organizations.

The Marketing Branch includes most elements of the former Canadian Government Travel Bureau. It promotes travel to Canada from other countries, promotes travel within Canada by Canadians and co-ordinates its activities with those of the provinces, territories and private sector. In a complex marketing program, the Branch analyzes and identifies the market, and uses highly sophisticated electronic and print advertising campaigns and a publicity program involving written material, displays, photographs and films to create the demand. The Branch maintains 26 development and promotional offices in the United States and seven overseas countries. It also has travel trade programs to promote tours to and within Canada and to stimulate growth in the convention and corporate meeting business.

The Industry Development Branch is concerned with the supply side of the industry. It fosters growth and improvement in the travel "plant". Its first priority is to define the industry and to maximize the contribution to tourism of the key sectors. By both professional and financial assistance it helps the provinces and territories in formulating tourism development plans and is instrumental in resolving financing for critically needed facilities.

The Policy Planning and Industry Relations Branch works to ensure that the supply and demand sides grow in a balanced way. It examines priorities, identifies needs and makes recommendations on the allocation of resources. The Branch is also responsible for co-ordinating liaison with other federal government agencies, the provinces and municipalities and with private sector tourism-related organizations, internationally and domestically. The Branch also gathers and disseminates information on tourism to the travel industry, the media and the public, and provides administrative and staff support for the other branches.

18.3.3 Export Development Corporation

The EDC is a Crown corporation empowered by federal statute to insure Canadian firms against non-payment when Canadian goods and services are sold abroad; to make loans to foreign purchasers of Canadian capital equipment and technical services; to guarantee financial institutions against loss when they are involved in an export transaction by financing either the

Canadian supplier or the foreign buyer; and to insure Canadian firms against loss of their investments abroad by reason of political actions. Direction of the affairs of the EDC is vested in a 12-member board. The head office is in Ottawa and district offices are located in Montreal, Toronto and Vancouver, with responsibility, respectively, in Quebec and eastern Canada, Ontario and western Canada.

Export credits insurance. EDC may insure Canadian exporters against non-payment when they grant credit to foreign buyers under contracts involving the following classes of export transactions: consumer goods sold on short-term credit usual for the particular trade, which normally ranges from documentary sight draft to a maximum of 180 days; capital goods such as heavy machinery sold on medium-term credit which may extend to a maximum of five years; services rendered to a foreign customer, such as design, engineering, construction, and technological and marketing services; treatment or servicing of goods for a foreign customer; photogrammetric and geophysical surveys, etc. EDC may also insure the payment of "invisible" exports such as the sale or licensing to a foreign customer of any right in a patent, trademark or copyright, advertising fees, fees to auditors, consultants, etc. To assist him in financing for exports, a policy-holder may request EDC to assign the proceeds of any losses payable under a policy to a bank or other agent providing financing in respect of export sales. An exporter may assign an individual bill or he may make a blanket assignment of all his foreign accounts receivable.

The main risks covered under an EDC policy are: insolvency of the foreign buyer; failure of the buyer to pay to the exporter within six months after due date the gross invoice value of goods which he has duly accepted; repudiation by the buyer which does not result from a breach of contract by the exporter and where proceedings against the buyer would serve no useful purpose; blockage of funds or transfer difficulties which prevent the Canadian exporter from receiving payment; war or revolution in the buyer's country; cancellation or non-renewal of an export permit and the imposition of restrictions on the export of goods not previously subject to restriction; and any other cause outside the control of both the exporter and the buyer which arises from events occurring outside Canada and continental United States of America, e.g. the cancellation of an import licence or the imposition of import restrictions on goods not previously subject to licence or restriction.

Export finance. EDC also makes long-term loans to foreign borrowers at internationally competitive interest rates or guarantees private loans to foreign borrowers to finance the purchase of Canadian capital equipment and services when extended credit terms are required and when commercial financing is not available. In addition, where international competition so requires, EDC may guarantee local cost financing provided by the private sector, or may finance directly up to the value of the down payment made on the goods and services exported from Canada in respect of a financed project.

While the following list is not exclusive, capital equipment and services, by industry, eligible for export financing include — power industry: conventional and nuclear power plants, electrification programs and transmission lines, etc.; transportation industry: aircraft, airport projects, flight simulators, navigational equipment, ocean-going vessels, locomotives, rolling stock, subway systems, integrated pipelines, etc.; communications industry: equipment for telecommunications such as telephone systems, microwave facilities, earth satellite stations, etc.; other capital goods industries: equipment for wood, pulp and paper, chemical, mining, construction and metallurgical projects, etc.; under certain conditions long-term loans and guarantees would be available for airport terminals and hotels; and services: services related to appraisal and development (but not feasibility studies) of natural resources and primary and secondary industry projects. EDC may make loans to foreign national development banks for re-lending to importers in their respective countries to enable them to buy Canadian capital goods.

A transaction must be one for which extended credit terms (beyond five years) are necessary and justifiable. The project must be financially and economically sound and the foreign buyer and the country to which the goods are shipped must be creditworthy. The transaction must have a Canadian material/labour content of not less than 80%, and it must provide employment and industrial benefits for Canada, as well as give promise of future markets for Canadian exports in the country or geographical area concerned. All goods and services financed must normally be exported from Canada.

Foreign investment insurance. EDC offers insurance against certain political risks of loss of Canadian investments abroad. Investments may vary from that of the investor acquiring the right to share in the assets of a business carried on in a foreign country to that of the investor lending money to a person in a foreign country for the purpose of establishing a business in that country.

Only new investments made in developing countries qualify for foreign investment insurance but the Export Development Act allows considerable flexibility as to the type. Before a policy is issued, the Minister of Industry, Trade and Commerce must be assured that the interests of EDC in insured investments will be protected.

The program offers facilities covering three broad political risks: inconvertibility, or inability to repatriate earnings or capital; expropriation; and insurrection, revolution or war. The investor can elect to take out a policy covering any, or all, or any combination of the three political risks; coverage is restricted to a maximum of 15 years. Any person, including private companies, government agencies, partnerships and organizations, carrying on business or other activities in Canada, and wishing to insure a new investment, should approach EDC as early as possible in the planning stages of the investment for an opinion as to its eligibility for foreign investment insurance.

18.4 Tariffs and trade agreements

18.4.1 Canadian tariff structure

Information relating to rates of duty, value for duty and anti-dumping duty is available from the Department of National Revenue, Customs and Excise, which administers the Customs Act, the Customs Tariff and the Anti-dumping Act. Details of the organization and functions of the Tariff Board will be found in Appendix 1.

The Canadian tariff consists, in the main, of four sets of tariff rates — British preferential, most-favoured-nation, general and general preferential.

British preferential tariff rates are applied to imported commodities from British countries, with the exception of Hong Kong, when conveyed without trans-shipment from a port of any British country enjoying the benefits of the British preferential tariff into a port of Canada. Some Commonwealth countries have trade agreements with Canada that provide for rates of duty, on certain specified goods, lower than the British preferential rates.

Most-favoured-nation rates are usually higher than the British preferential rates and lower than the general tariff rates. They are applied to commodities imported from countries with which Canada has trade agreements. These rates would apply to British countries when they are lower than the British preferential tariff rates. The most important trade agreement concerning the effective rates applied to goods imported from countries entitled to most-favoured-nation rates is the General Agreement on Tariffs and Trade (GATT).

General tariff rates are applied to goods imported from the few countries with which Canada has not made trade agreements.

The General Preferential Tariff came into effect on July 1, 1974, as a result of Canada's acceding to the Generalized System of Preferences, which is designed to allow lower rates of duty on goods imported from developing countries. Generally, the rates are the lesser of the British Preferential Tariff or the Most-Favoured-Nation Tariff minus one third.

Despite the numerous tariff items in the Customs Tariff and the various rates of duty applicable to each item, there are numerous goods which are duty free under all four tariffs.

Valuation. In general, the Customs Act provides that the value for duty of imported goods shall be the fair market value of like goods as established in the home market of the exporter at the time when and place from which the goods are shipped directly to Canada when sold "(a) to purchasers located at that place with whom the vendor deals at arm's length and who are at the same or substantially the same trade level as the importer, and (b) in the same or substantially the same quantities for home consumption in the ordinary course of trade under competitive conditions". In cases where like goods are not sold for home consumption but similar goods are sold, the value for duty shall be the cost of production of the goods imported plus an amount for gross profit equal in percentage to that earned on the sale of similar goods in the country of export. The value for duty ordinarily may not be less than the amount for which the goods were sold to the purchaser in Canada, exclusive of all charges thereon after their shipment from the country of export. Internal taxes in the country of export, when not

incurred on exported goods, do not form part of the value for duty. There are, of course, further provisions for determining value for duty under the Act.

Anti-dumping Act. Canada's Anti-dumping Act provides, in brief, that where goods are dumped, i.e. the export price is less than the normal value, and such dumping has caused, is causing, or is likely to cause material injury to the production of like goods in Canada, or has materially retarded or is materially retarding the establishment of the production in Canada of like goods as determined by the Anti-dumping Tribunal, there shall be levied, collected and paid an anti-dumping duty. This anti-dumping duty is in an amount equal to the margin of dumping of the entered goods.

Drawback. Drawback legislation is designed to remove the customs duty and sales tax included in the manufacturers' costs so as to enable them to compete more equitably both abroad and at home with foreign manufacturers. It does this by granting a drawback, in the case of Canadian exporters, of customs duty and sales taxes paid on imported parts or materials used in Canada in the manufacture of goods subsequently exported. In the case of certain strategic industries in Canada, (i.e. aircraft, automobiles and other secondary manufacturers) their costs of plant equipment or key materials are also reduced in the same manner when the specified imported goods are used in eligible Canadian manufacturers. Other areas where drawbacks are payable include: ships stores; joint Canada-US projects; and imported goods exported or destroyed in Canada.

18.4.2 Tariff and trade arrangements

Canada's tariff arrangements with other countries fall into three main categories: trade agreements with a number of Commonwealth countries; the General Agreement on Tariffs and Trade (GATT); and other arrangements and agreements.

Canada signed the Protocol of Provisional Application of the General Agreement on Tariffs and Trade on October 30, 1947 and brought the General Agreement into force on January 1, 1948. The Agreement provides for scheduled tariff concessions and the exchange of most-favoured-nation treatment among the contracting parties, and lays down rules and regulations to govern the conduct of international trade. As at July 1974 there were 83 members and two provisional members, Tunisia and the Philippines. GATT is applied on a de facto basis also to a number of newly independent states pending decision as to their future commercial policies.

Trade relations between Canada and a number of other countries are governed by trade agreements of various kinds, by exchange of most-favoured-nation treatment under Orders in Council, by continuation to newly independent states of the same treatment originally negotiated with the countries previously responsible for their commercial relations and by even less formal arrangements.

Britain and Ireland will terminate by 1977 the preferential tariffs extended to Canada. The phasing out of these preferences began on February 1, 1973, as a result of the accession by those countries to the European Economic Community (EEC).

18.4.2.1 Tariff and trade arrangements with Commonwealth countries as at December 31, 1974

Australia. Trade Agreement in force June 30, 1960, modified and continued by an Exchange of Letters, October 25, 1973. GATT effective January 1, 1948. (Bindings of rates of duty and margins of preference on specified products and exchange of tariff preferences.)

Bahamas. Relations are based on the Canada — West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT de facto application. (Exchange of preferential tariff treatment.)

Bangladesh (formerly East Pakistan). GATT effective December 16, 1972. (Canada accords British preferential treatment. Bangladesh accords most-favoured-nation treatment to Canada.)

Barbados. Relations are based on Canada — West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective November 30, 1966. (Exchange of preferential tariff treatment.)

Botswana. GATT de facto application. (Canada accords British preferential tariff treatment.)

Britain. Trade Agreement effective September 1, 1937; modified by exchanges of letters November 16, 1938 and October 30, 1947, was terminated by Britain on January 31, 1973 as a result of Britain's accession to the EEC. The tariff preferences it extends to Canada are being phased out over a transitional period ending in 1977. GATT effective January 1, 1948.

Commonwealth Caribbean (Belize (formerly British Honduras), Bermuda, Leeward Islands, Windward Islands). Canada — British West Indies Trade Agreement was signed July 6, 1925, and came in force April 30, 1927; Canadian notice of termination of November 23, 1938, was replaced by notice of December 27, 1939 which continued the Agreement. Protocol signed July 8, 1966, provides inter alia for continuation of 1925 Agreement. Belize, Bermuda, the Leeward Islands and the Windward Islands participate in GATT. (Exchange of preferential tariff treatment.)

Cyprus. GATT effective August 16, 1960. (Exchange of British preferential tariff treatment.)

Fiji. Maintains de facto application of GATT. (Canada accords British preferential tariff treatment to Fiji. Fiji extends most-favoured-nation treatment to Canada.)

Gambia. GATT effective February 18, 1965. (Canada accords British preferential tariff treatment to Gambia. Gambia extends most-favoured-nation treatment to Canada.)

Ghana. GATT effective October 18, 1957. (Canada accords British preferential tariff treatment to Ghana, except on cocoa beans. Ghana extends most-favoured-nation treatment to Canada.)

Grenada. Relations are based on the Canada — West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). Participation in GATT. (Exchange of preferential tariff treatment.)

Guyana. Relations are based on the Canada — West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective July 5, 1966. (Exchange of preferential tariff treatment.)

India. Since 1897 Canada has unilaterally accorded British preferential treatment without contractual obligation. GATT effective July 8, 1948. (Canada accords British preferential tariff treatment to India. India extends most-favoured-nation treatment to Canada.)

Jamaica. Relations are based on Canada — West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective August 6, 1962. (Exchange of preferential tariff treatment.)

Kenya. GATT effective December 12, 1963. (Canada accords British preferential tariff treatment to Kenya. Kenya extends most-favoured-nation treatment to Canada.)

Lesotho. GATT de facto application. (Canada accords British preferential tariff treatment to Lesotho.)

Malawi. Malawi and Canada observe the terms of 1958 Trade Agreement between Canada and the former Federation of Rhodesia and Nyasaland. GATT effective July 6, 1964. (Exchange of preferential tariff treatment.)

Malaysia. GATT effective September 16, 1963. (Canada accords British preferential tariff treatment to Malaysia. Malaysia extends some preferential rates to Canada.)

Maldives. Relations governed by Trade Agreement of 1937 with Britain. GATT de facto application. (Canada accords British preferential tariff treatment.)

Malta. Canada — Britain Trade Agreement of 1937 was legal basis for exchange of British preferential tariff treatment. This agreement terminated by Britain January 31, 1973 as a result of Britain's accession to the EEC. GATT effective September 16, 1964.

Mauritius. GATT effective March 12, 1968. (Exchange of British preferential tariff treatment.)

New Zealand. Trade Agreement in force May 24, 1932, modified and continued in force by an Exchange of Letters dated July 26, 1973. GATT effective July 26, 1948. (Bindings of rates of duty on specified products and the exchange of tariff preferences.)

Nigeria. Relations governed by Trade Agreement of 1937 with Britain. GATT effective October 1, 1960. (Canada accords British preferential treatment to Nigeria. Nigeria extends most-favoured-nation treatment to Canada.)

Rhodesia. Canada does not recognize the present government of Rhodesia. (Trade embargo exists between Canada and Rhodesia with certain humanitarian exceptions.)

Sierra Leone. Relations governed by Trade Agreement of 1937 with Britain. GATT effective April 27, 1961. (Canada accords British preferential tariff treatment to Sierra Leone. Sierra Leone extends most-favoured-nation tariff treatment to Canada.)

Singapore. GATT membership August 10, 1973. (Canada and Singapore exchange British preferential tariff treatment.)

Sri Lanka, Republic of (formerly Ceylon). GATT effective July 29, 1948. (Canada accords British preferential tariff treatment to Sri Lanka. Sri Lanka extends most-favoured-nation tariff treatment to Canada.)

Swaziland. GATT de facto application. (Canada accords British preferential treatment to Swaziland.)

Tanzania. GATT effective for Tanganyika December 9, 1961 and extended to Zanzibar upon formation of United Republic, April 23, 1964. (Canada accords British preferential tariff treatment to Tanzania. Tanzania extends most-favoured-nation treatment to Canada.)

Tonga. Tonga maintains de facto application of GATT. (Exchange of British preferential tariff treatment.)

Trinidad and Tobago. Relations are based on Canada — West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective August 31, 1962. (Exchange of preferential tariff treatment.)

Uganda. GATT effective October 9, 1962. (Canada accords British preferential tariff treatment to Uganda. Uganda extends most-favoured-nation tariff treatment to Canada.)

Western Samoa. No agreement. (Exchange of British preferential tariff treatment.)

Zambia. GATT de facto application. (Canada accords British preferential tariff treatment to Zambia. Zambia extends most-favoured-nation treatment to Canada.)

18.4.2.2 Tariff and trade arrangements with non-Commonwealth countries as at December 31, 1974

Afghanistan. Trade Agreement entered into force November 27, 1974. (Exchange of most-favoured-nation treatment.)

Algeria. Franco — Canadian Trade Agreement of 1933 applied to Algeria. Algeria maintains de facto application of GATT. (Since the creation of Algeria as an independent state in 1962, Canada has continued to grant most-favoured-nation treatment.)

Arab Republic of Egypt. Exchange of notes in force December 3, 1952. GATT effective May 9, 1970. (Exchange of most-favoured-nation treatment.)

Argentina. GATT effective October 11, 1967. (Exchange of most-favoured-nation treatment.)

Austria. GATT effective October 19, 1951. (Exchange of most-favoured-nation treatment.)

Bahrain. Bahrain maintains de facto application of GATT. (Exchange of most-favoured-nation treatment.)

Belgium — Luxembourg. Convention of Commerce with Belgium — Luxembourg Economic Union (including Belgian colonies) entered into effect October 22, 1924. GATT effective January 1, 1948. (Exchange of most-favoured-nation treatment.)

Benelux (Belgium — Netherlands — Luxembourg Customs Union). (See Belgium — Luxembourg and Netherlands.)

Bolivia. Order in Council of July 20, 1935 accepted Article 15 of UK — Bolivia Treaty of Commerce. (Exchange of most-favoured-nation treatment.)

Brazil. Trade Agreement in force April 16, 1943. GATT effective July 31, 1948. (Exchange of most-favoured-nation treatment.)

Bulgaria. Trade Agreement effective January 7, 1974, provides for most-favoured-nation treatment and exception for British preferential tariffs. To be extended for yearly periods.

Burma. GATT effective July 29, 1948. (Exchange of most-favoured-nation treatment.)

Burundi. GATT effective November 25, 1965. (Exchange of most-favoured-nation treatment.)

Cameroon. Franco — Canadian Trade Agreement of 1933 applied to Cameroon. GATT effective November 28, 1960. (Exchange of most-favoured-nation treatment.)

Central African Republic. Franco — Canadian Trade Agreement of 1933 applied to Central African Republic. GATT effective August 14, 1960. (Exchange of most-favoured-nation treatment.)

Chad. Franco — Canadian Trade Agreement of 1933 applied to Chad. GATT effective August 11, 1960. (Exchange of most-favoured-nation treatment.)

Chile. Trade Agreement in force October 29, 1943. GATT effective March 16, 1948. (Exchange of most-favoured-nation treatment.)

China, People's Republic of. Canada — China Trade Agreement of October 13, 1973. (Exchange of most-favoured-nation treatment.)

Colombia. Treaty of Commerce with Britain of February 16, 1866 applies to Canada. Modified by protocol of August 20, 1912 and exchange of notes December 30, 1938. (Exchange of most-favoured-nation treatment.)

Congo (Brazzaville). Franco — Canadian Trade Agreement of 1933 applies to Congo (Brazzaville). GATT effective August 15, 1960. (Exchange of most-favoured-nation treatment.)

Costa Rica. Modus vivendi in force January 26, 1951. (Exchange of most-favoured-nation treatment.)

Cuba. GATT effective January 1, 1948. (Exchange of most-favoured-nation treatment.)

Czechoslovakia. Convention of Commerce in force November 14, 1928. GATT effective May 21, 1948. (Exchange of most-favoured-nation treatment.)

Dahomey. Franco — Canadian Trade Agreement of 1933 applied to Dahomey. GATT effective August 1, 1960. (Exchange of most-favoured-nation treatment.)

Denmark (including Greenland). Treaties of Peace and Commerce with Britain of February 13, 1660 and July 11, 1670 apply to Canada. GATT effective May 28, 1950. (Exchange of most-favoured-nation treatment.)

Dominican Republic. Trade Agreement in force January 22, 1941. GATT effective May 19, 1950. (Exchange of most-favoured-nation treatment, including scheduled concessions.)

Ecuador. Modus vivendi in force December 1, 1950. (Exchange of most-favoured-nation treatment.)

El Salvador. Exchange of notes in force November 17, 1937. (Exchange of most-favoured-nation treatment.)

Equatorial Guinea. Since August 1, 1928, UK — Spain Treaty of Commerce of 1922. Canada — Spain Trade Agreement signed May 25, 1954. GATT de facto application. (Since the creation of Equatorial Guinea as an independent state in 1968, Canada has continued to grant most-favoured-nation treatment.)

Ethiopia. Exchange of notes effective June 3, 1955. (Exchange of most-favoured-nation treatment.)

Finland. Exchange of notes effective November 17, 1948. GATT effective May 25, 1950. (Exchange of most-favoured-nation treatment.)

France and French overseas territories. Trade Agreement in force June 10, 1933. Exchange of notes of September 29, 1934 and additional protocol of February 26, 1935. GATT effective January 1, 1948. (Exchange of most-favoured-nation treatment, including scheduled concessions.)

Gabon. Franco — Canadian Trade Agreement of 1933 applied to Gabon. GATT effective August 17, 1960. (Exchange of most-favoured-nation treatment.)

Germany, Federal Republic of. GATT effective October 1, 1951. (Exchange of most-favoured-nation treatment.)

Greece. Modus vivendi by exchange of notes of July 24-28, 1947. GATT effective March 1, 1951. (Exchange of most-favoured-nation treatment.)

Greenland. (See Denmark.)

Guatemala. Trade Agreement in force January 14, 1939. (Exchange of most-favoured-nation treatment.)

Guinea. Franco — Canadian Trade Agreement of 1933 applied to Guinea. (Since the creation of Guinea as an independent state in 1958, Canada has continued to grant most-favoured-nation treatment.)

Guinea — Bissau. Canada — Portugal Trade Agreement of April 29, 1955 applied. (Since the creation of Guinea — Bissau in 1974, Canada has continued to grant most-favoured-nation treatment.)

Haiti. Trade Agreement in force January 10, 1939. GATT effective January 1, 1950. (Exchange of most-favoured-nation treatment.)

Honduras. Exchange of notes effective July 18, 1956. Ratified in Honduras September 5, 1956. (Exchange of most-favoured-nation treatment.)

Hungary. Trade Agreement January 1, 1972 effective until January 1, 1977, includes exchange of most-favoured-nation treatment and provides for annual consultations. GATT effective August 8, 1973.

Iceland. GATT effective April 21, 1968. (Exchange of most-favoured-nation treatment.)

Indonesia. GATT effective March 1, 1948. (Exchange of most-favoured-nation treatment.)

Iran. Iran accorded most-favoured-nation treatment by Order in Council from September 5, 1956. (Canada grants most-favoured-nation tariff rates as long as Iran accords reciprocal treatment.)

Iraq. Special arrangement by Order in Council effective September 15, 1951. (Exchange of most-favoured-nation treatment.)

Ireland. Trade Agreement in force January 2, 1933, modified by exchange of letters on December 21, 1967, was terminated by Ireland on January 31, 1973, as a result of Ireland's accession to the EEC. The tariff preferences it extends to Canada are being phased out over a transitional period ending in 1977.) GATT effective December 22, 1967.

Israel. GATT effective July 5, 1962. (Exchange of most-favoured-nation treatment.)

Italy. Modus vivendi by exchange of notes effective April 28, 1948. GATT effective January 1, 1950. (Exchange of most-favoured-nation treatment.)

Ivory Coast. Franco — Canadian Trade Agreement of 1933 applied to Ivory Coast. GATT effective August 7, 1960. (Exchange of most-favoured-nation treatment.)

Japan. Agreement on Commerce effective June 7, 1954. GATT effective September 10, 1955. (Exchange of most-favoured-nation treatment.)

Khmer Republic (formerly Cambodia). Franco — Canadian Trade Agreement of 1933 applied to Cambodia. Became a de facto member of GATT in 1968. (Since the creation of Cambodia as an independent state in 1955, Canada has continued to grant most-favoured-nation treatment.)

Korea, Republic of. Trade Agreement in force December 20, 1966. GATT effective April 14, 1967. (Exchange of most-favoured-nation treatment.)

Kuwait. GATT effective June 18, 1961. (Exchange of most-favoured-nation treatment.)

Laos. Franco — Canadian Trade Agreement of 1933 applied to Laos. (Since the creation of Laos as an independent state in 1955, Canada has continued to grant most-favoured-nation treatment.)

Lebanon. Special arrangement by Order in Council of November 19, 1946. (Canada grants most-favoured-nation tariff rates as long as Lebanon accords reciprocal treatment.)

Liberia. Special arrangement by Order in Council effective March 1, 1955. (Canada grants most-favoured-nation treatment.)

Liechtenstein. (See Switzerland.)

Luxembourg. (See Belgium — Luxembourg.)

Malagasy Republic. Franco — Canadian Trade Agreement of 1933 applied to Malagasy Republic. GATT effective September 30, 1963. (Exchange of most-favoured-nation treatment.)

Mali. Franco — Canadian Trade Agreement of 1933 applied to Mali. Mali maintains a de facto application of GATT. (Since the creation of Mali as an independent state in 1960, Canada has continued to grant most-favoured-nation treatment.)

Mauritania. Franco — Canadian Trade Agreement of 1933 applied to Mauritania. GATT effective November 28, 1960. (Exchange of most-favoured-nation treatment.)

Mexico. Trade Agreement in force June 5, 1947. (Exchange of most-favoured-nation treatment.)

Morocco. Various agreements relating to former French, Spanish and International Zones of Morocco. (Since the creation of Morocco as an independent state in 1956, Canada has continued to grant most-favoured-nation treatment.)

Netherlands. Convention of Commerce of July 11, 1924 includes Netherlands Antilles and Surinam. GATT effective January 1, 1948. (Exchange of most-favoured-nation treatment.)

Nicaragua. Trade Agreement in force December 19, 1946. GATT effective May 28, 1950. (Exchange of most-favoured-nation treatment.)

Niger. Franco — Canadian Trade Agreement of 1933 applied to Niger. GATT effective August 3, 1960. (Exchange of most-favoured-nation treatment.)

Norway. Convention of Commerce and Navigation with UK of March 18, 1826 applied to Canada. GATT effective July 10, 1948. (Exchange of most-favoured-nation treatment.)

Pakistan. Canada unilaterally accords British preferential treatment without contractual obligation. GATT effective July 30, 1948. (Canada accords British preferential tariff treatment to Pakistan. Pakistan accords most-favoured-nation tariff treatment to Canada.)

Panama. Exchange of notes in force August 12, 1935. (Exchange of most-favoured-nation treatment.)

Paraguay. Exchange of notes in force June 21, 1940. (Exchange of most-favoured-nation treatment.)

Peru. GATT effective October 8, 1951. (Exchange of most-favoured-nation treatment.)

Philippines. Trade Agreement in force August 29, 1972. Granted provisional accession to GATT on August 9, 1973. (Exchange of most-favoured-nation treatment.)

Poland. Convention of Commerce in force August 15, 1936. GATT effective October 18, 1967. (Exchange of most-favoured-nation treatment.)

Portugal, Portuguese adjacent islands and Portuguese overseas provinces. Trade Agreement in force April 29, 1955. GATT effective May 6, 1962. (Exchange of most-favoured-nation treatment.)

Qatar. Qatar maintains de facto application of GATT. (Exchange of most-favoured-nation treatment.)

Romania. Trade Agreement went into effect March 22, 1971 and was renewed March 22, 1974 for a further one-year period. GATT effective November 14, 1971. (Exchange of most-favoured-nation treatment and Romania endeavours to provide improved access for Canadian exports. Provides for annual consultations.)

Rwanda. GATT effective January 1, 1966. (Canada grants most-favoured-nation treatment.)

Senegal. Franco — Canadian Trade Agreement of 1933 applied to Senegal. GATT effective June 20, 1960. (Exchange of most-favoured-nation treatment.)

South Africa. Trade Agreement in force October 13, 1932. Exchange of notes August 2-31, 1935, effective retroactively from July 1, 1935. GATT effective June 14, 1948. (Exchange of British preferential rates on scheduled items. Exchange of most-favoured-nation treatment.)

Spain and Spanish possessions. Since August 1, 1928, Canada has adhered to UK — Spain Treaty of Commerce of October 31, 1922. Trade Agreement signed May 26, 1954. GATT effective August 29, 1963. (Exchange of most-favoured-nation treatment.)

Sweden. UK — Sweden Convention of Commerce and Navigation of March 18, 1826 applies to Canada. GATT effective May 1, 1950. (Exchange of most-favoured-nation treatment.)

Switzerland. UK — Switzerland Treaty of Friendship, Commerce and Reciprocal Establishment of September 6, 1855 applies to Canada. By exchange of notes Liechtenstein included under terms of this Agreement, effective July 11, 1947. GATT effective August 1, 1966. (Exchange of most-favoured-nation treatment.)

Syrian Arab Republic. Special arrangement by Order in Council of November 19, 1946. (Canada grants most-favoured-nation treatment tariff rates as long as Syria accords reciprocal treatment.)

Thailand. Modus vivendi effective April 22, 1969. (Exchange of most-favoured-nation treatment.)

Togo. Franco — Canadian Trade Agreement of 1933 applied to Togo. GATT effective March 20, 1964. (Exchange of most-favoured-nation treatment.)

Tunisia. Trade Agreement in force August 8, 1972. Tunisia acceded to GATT provisionally in 1959. (Exchange of most-favoured-nation treatment.)

Turkey. Exchange of notes in effect March 15, 1948. GATT effective October 17, 1951. (Exchange of most-favoured-nation treatment.)

Union of Soviet Socialist Republics. Trade Agreement effective from April 1972 to April 1976. (Exchange of most-favoured-nation treatment and annual consultation.)

United States of America. Trade Agreement of November 17, 1938 suspended as long as both countries continue to be contracting parties to GATT. GATT effective January 1, 1948. (Exchange of most-favoured-nation treatment.)

Upper Volta. Franco — Canadian Trade Agreement of 1933 applied to Upper Volta. GATT effective August 5, 1960. (Exchange of most-favoured-nation treatment.)

Uruguay. Trade Agreement in force May 15, 1940. Additional protocol signed October 19, 1953. GATT effective December 16, 1953. (Exchange of most-favoured-nation treatment.)

Venezuela. Modus vivendi in force October 11, 1950. (Exchange of most-favoured-nation treatment. Made for one year and renewed annually.)

Vietnam. Franco — Canadian Trade Agreement of 1933 applied to Vietnam. (Since 1955, Canada has continued to accord most-favoured-nation rates.)

Yemen, People's Democratic Republic of. Yemen maintains de facto application of GATT. (Exchange of most-favoured-nation treatment.)

Yugoslavia. Trade Agreement signed but not ratified October 1973, provides most-favoured-nation treatment except for British preferential tariffs and exception for customs unions and free trade areas.

Zaire (formerly Congo, Kinshasa). Belgo — Canadian Convention of Commerce of 1924 applied to Congo (Kinshasa). GATT effective September 11, 1971. (Exchange of most-favoured-nation treatment.)

18.4.2.3 Tariff preferences for specified countries

Canada implemented a system of tariff preferences for specified countries on July 1, 1974. Imports of most manufactured and semi-manufactured products from designated beneficiary countries will be subject to the lower of the British preferential tariff or the most-favoured-nation tariff, less one third. The only notable product group to which the preference system does not apply is textiles.

Beneficiary countries: Algeria, American Samoa, Antigua, Argentina, Ascension, Bahamas, Bahrain, Bangladesh, Barbados, Belize, Bermuda, Bolivia, Botswana, Brazil, British Indian Ocean Territory, British Solomon Islands, British Virgin Islands, Brunei, Bulgaria, Burma, Burundi, Cameroon, Cayman Islands, Central African Republic, Chad, Chile, Christmas Island, Cocos Islands, Colombia, Comoro Islands, Congo, Cook Islands, Costa Rica, Cuba,

Cyprus, Dahomey, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Ethiopia, Falkland Islands, Fiji, French Polynesia, French Southern and Antarctic Territories, French Territory of the Afars and the Issas, Gabon, Gambia, Ghana, Gibraltar, Gilbert and Ellice Islands, Greece, Grenada, Guam, Guatemala, Guinea, Guyana, Haiti, Honduras, Hong Kong, India, Indonesia, Iran, Iraq, Israel, Ivory Coast, Jamaica, Kenya, Khmer Republic, Korea (Republic of), Kuwait, Laos, Lebanon, Lesotho, Liberia, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Mauritania, Mauritius, Mexico, Montserrat, Morocco, Nauru, Netherlands Antilles, New Caledonia and dependencies, Nicaragua, Niger, Nigeria, Norfolk Island, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Pitcairn, Qatar, Romania, Rwanda, St. Kitts — Nevis — Anguilla, St. Helena, St. Lucia, St. Pierre and Miquelon, St. Vincent, Senegal, Seychelles, Sierra Leone, Singapore, Spanish North Africa, Sri Lanka, Surinam, Swaziland, Syrian Arab Republic, Tanzania (United Republic of), Thailand, Togo, Tonga, Trinidad and Tobago, Tristan da Cunha, Tunisia, Turkey, Turks and Caicos Islands, Uganda, United Arab Emirates, United States Virgin Islands, Upper Volta, Uruguay, Venezuela, Vietnam (Republic of), Western Samoa, Yemen (Democratic), Yugoslavia, Zaïre, Zambia.

Sources

- 18.1 - 18.1.4 Merchandising and Services Division, Industry Statistics Branch, Statistics Canada.
- 18.1.5 Marketing and Trade Division, Economics Branch, Canada Department of Agriculture.
- 18.1.6 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 18.2 External Trade Division, General Statistics Branch, Statistics Canada.
- 18.3 Information Services Branch, Department of Industry, Trade and Commerce.
- 18.4.1 Information Services, Department of National Revenue.
- 18.4.2 Information Services Branch, Department of Industry, Trade and Commerce.

Tables

.. not available
 ... not appropriate or not applicable
 — nil or zero
 - - too small to be expressed

e estimate
 p preliminary
 r revised
 certain tables may not add due to rounding

18.1 Retail trade, by kind of business and by province, 1970-74¹ and percentage change 1970-74

Kind of business and province	1970 \$'000,000	1971 \$'000,000	1972 \$'000,000	1973 \$'000,000	1974 ¹ \$'000,000	Per- centage change 1970-74	Per- centage distrib- ution 1974
Kind of business							
Grocery and combination stores	6,849.2	7,260.2	7,890.1	8,828.8	10,352.1	+51.1	23.6
All other food stores	640.1	654.2	717.7	787.1	871.3	+36.1	2.0
Department stores	2,852.3	3,184.1	3,687.9	4,306.8	5,059.3	+77.4	11.5
General merchandise stores	848.5	938.8	1,023.6	1,140.5	1,280.0	+50.9	2.9
General stores	575.2	616.5	678.0	757.3	887.8	+54.3	2.0
Variety stores	552.9	570.7	613.4	642.8	702.5	+27.1	1.6
Motor vehicle dealers	4,197.2	4,924.7	5,662.9	6,764.4	7,603.8	+81.2	17.4
Service stations and garages	2,530.7	2,694.9	2,892.1	3,172.8	3,635.5	+43.7	8.3
Men's clothing stores	446.0	475.6	508.3	539.9	595.9	+33.6	1.4
Women's clothing stores	561.4	621.8	672.5	725.3	821.1	+46.3	1.9
Family clothing stores	397.5	423.8	458.1	491.9	560.0	+40.9	1.3
Shoe stores	327.5	345.7	363.4	393.3	426.8	+30.3	1.0
Hardware stores	382.8	408.9	447.9	499.3	574.8	+50.2	1.3
Furniture, TV and appliance stores	847.4	942.3	1,069.0	1,195.2	1,304.8	+54.0	3.0
Fuel dealers	473.1	523.3	579.0	618.1	818.8	+73.1	1.9
Drug stores	840.0	907.0	980.8	1,081.8	1,241.2	+47.8	2.8
Jewellery stores	218.5	236.0	262.9	301.5	356.4	+63.1	0.8
All other stores	4,493.6	4,917.7	5,422.2	5,992.3	6,727.4	+49.7	15.4
Total	28,033.9	30,646.1	33,929.7	38,239.2	43,819.3	+56.3	100.0
Province							
Newfoundland	493.4	533.3	603.6	686.3	809.6	+64.1	1.8
Prince Edward Island	131.5	141.0	154.5	177.5	206.9	+57.3	0.5
Nova Scotia	930.0	1,022.9	1,132.5	1,268.7	1,473.7	+58.5	3.4
New Brunswick	740.5	834.8	918.2	1,033.3	1,187.8	+60.4	2.7
Quebec	7,074.1	7,681.4	8,485.5	9,538.7	10,843.3	+53.3	24.7
Ontario	10,885.0	11,877.2	13,014.2	14,524.7	16,399.5	+50.7	37.4
Manitoba	1,227.2	1,318.1	1,470.0	1,676.0	1,932.9	+57.5	4.4
Saskatchewan	1,018.4	1,138.9	1,274.9	1,458.8	1,763.7	+73.2	4.0
Alberta	2,274.0	2,466.6	2,779.6	3,139.4	3,712.6	+63.3	8.5
British Columbia ²	3,259.8	3,631.9	4,096.7	4,735.8	5,489.2	+68.4	12.5

¹Subject to revision.

²Includes the Yukon Territory and Northwest Territories.

18.2 Sales of chain and independent stores, by kind of business, 1970 and 1974 and percentage changes 1970-74

Kind of business	Chain stores			Independent stores		
	1970 \$'000,000	1974 ¹ \$'000,000	Per- centage change 1970-74	1970 \$'000,000	1974 ¹ \$'000,000	Per- centage change 1970-74
Grocery and combination stores	3,522.3	5,949.7	+68.9	3,327.0	4,402.4	+32.3
All other food stores	44.7	70.4	+57.5	595.3	800.9	+34.5
Department stores	2,852.3	5,059.3	+77.4	—	—	—
General merchandise stores	658.2	1,029.7	+56.4	190.2	250.4	+31.6
General stores	86.9	173.2	+99.3	488.3	714.6	+46.3
Variety stores	466.0	584.4	+25.4	86.9	118.0	+35.8
Motor vehicle dealers	66.2	124.8	+88.5	4,131.1	7,479.0	+81.0
Service stations and garages	143.9	399.0	+177.3	2,386.8	3,236.5	+35.6
Men's clothing stores	61.8	110.9	+79.4	384.2	485.0	+26.2
Women's clothing stores	182.6	335.6	+83.8	378.8	485.4	+28.1
Family clothing stores	101.0	159.4	+57.8	296.6	400.6	+35.1
Shoe stores	152.8	221.3	+44.8	174.8	205.6	+17.6
Hardware stores	70.3	109.2	+55.3	312.5	465.6	+49.0
Furniture, TV and appliance stores	151.4	251.0	+65.8	696.0	1,053.8	+51.4
Fuel dealers	71.0	166.1	+133.9	402.1	652.7	+62.3
Drug stores	125.3	229.6	+83.2	714.7	1,011.6	+41.5
Jewellery stores	81.2	140.4	+72.9	137.3	216.0	+57.3
All other stores	1,761.3	2,724.3	+54.7	2,732.3	4,003.1	+46.5
Total, all stores	10,599.2	17,838.3	+68.3	17,434.7	25,981.2	+49.0

¹Subject to revision.

18.3 Percentage market share of chain stores, by kind of business, 1966 and 1970-74

Kind of business	1966	1970	1971	1972	1973	1974 ¹
Grocery and combination stores	44.9	51.4	53.3	54.5	55.9	57.5
All other food stores	8.7	7.0	7.3	7.5	7.8	8.1
Department stores	100.0	100.0	100.0	100.0	100.0	100.0
General merchandise stores	74.7	77.6	78.8	79.3	80.0	80.4
General stores	16.1	15.1	16.8	17.9	18.7	19.5
Variety stores	86.7	84.3	83.9	84.1	83.9	83.2
Motor vehicle dealers	1.5	1.6	1.6	1.6	1.6	1.6
Service stations and garages	3.4	5.7	6.3	7.5	9.3	11.0
Men's clothing stores	13.2	13.9	14.8	16.0	17.1	18.6
Women's clothing stores	26.5	32.5	35.6	36.7	37.8	40.9
Family clothing stores	21.9	25.4	27.0	27.1	27.7	28.5
Shoe stores	45.0	46.6	48.5	49.7	51.0	51.8
Hardware stores	15.5	18.4	18.0	18.2	19.1	19.0
Furniture, TV and appliance stores	19.2	17.9	17.4	17.2	18.6	19.2
Fuel dealers	16.0	15.0	15.9	15.1	16.1	20.3
Drug stores	13.4	14.9	15.4	16.0	17.2	18.5
Jewellery stores	33.7	37.2	38.2	38.5	38.1	39.4
All other stores	37.4	39.2	39.4	39.2	40.2	40.5
Total, all stores	33.0	37.8	38.3	38.8	39.6	40.7

¹Subject to revision.

18.4 Department store sales by department, 1970-74

Department	Sales					Percentage change 1970-74
	1970 \$'000,000	1971 \$'000,000	1972 ¹ \$'000,000	1973 ¹ \$'000,000	1974 ¹ \$'000,000	
Women's, misses' and children's clothing						
Women's and misses' dresses, house-dresses, aprons and uniforms	80.4	87.2	91.4	103.1	107.4	+33.6
Women's and misses' coats and suits	58.6	64.9	74.2	87.4	106.2	+81.2
Women's and misses' sportswear	123.7	144.3	175.1	209.6	250.8	+102.8
Furs	13.0	14.0	15.8	19.1	20.5	+57.7
Infants' and children's wear and nursery equipment	81.1	86.3	103.0	109.3	134.4	+65.7
Girls' and teenage girls' wear	46.7	52.6	58.8	64.9	79.8	+70.9
Lingerie and women's sleepwear	53.4	57.3	66.0	75.3	82.3	+54.1
Intimate apparel	40.2	42.2	47.5	52.7	55.4	+37.8
Millinery	12.5	10.9	11.4	13.4	15.3	+22.4
Women's and girls' hosiery	50.2	47.2	49.6	51.3	53.5	+6.6
Women's and girls' gloves, mitts and accessories	47.8	51.4	59.5	69.0	79.4	+66.1
Women's, misses' and children's footwear	87.8	95.1	107.1	117.3	131.1	+49.3
Total, women's, misses' and children's clothing	695.5	753.4	859.4	972.4	1,116.1	+60.5
Men's and boys' clothing						
Men's clothing	124.6	149.6	177.0	211.7	242.0	+94.2
Men's furnishings	158.5	160.1	173.2	196.3	220.8	+39.3
Boys' clothing and furnishings	61.2	66.2	68.7	73.8	90.4	+47.7
Men's and boys' footwear	52.1	57.0	60.7	71.4	82.9	+59.1
Total, men's and boys' clothing	396.4	432.9	479.6	553.2	636.1	+60.5
Food and kindred products	140.4	174.8	190.3	218.9	254.9	+81.6
Toiletries, cosmetics and drugs	144.0	158.0	183.4	204.4	232.1	+61.2
Photographic equipment and supplies	45.1	49.5	60.3	71.2	83.9	+86.0
Piece goods	45.0	48.5	52.8	54.7	58.6	+30.2
Linens and domestics	73.5	80.3	93.3	107.6	129.1	+75.6
Smallwares and notions	38.5	39.0	45.0	46.0	54.6	+41.8
China and glassware	48.1	51.0	59.2	60.0	68.7	+42.8
Floor coverings	66.2	72.1	84.0	100.6	117.6	+77.6
Draperies, curtains and furniture covers	53.9	59.5	71.7	86.3	98.3	+82.4
Lamps, pictures, mirrors and all other home furnishings	28.7	29.4	36.7	49.4	55.4	+93.0
Furniture	134.2	148.9	175.8	227.2	282.2	+110.3
Major appliances	125.8	147.6	181.5	232.4	274.3	+118.0
Television, radio and music	122.0	144.6	166.3	197.7	232.0	+90.2
Housewares and small electrical appliances	91.4	104.4	124.9	151.8	172.1	+88.3
Hardware, paints, wallpaper, etc.	78.7	92.2	105.1	128.3	160.5	+103.9
Plumbing, heating and building materials	24.7	...	35.8	42.2	53.3	+115.8
Jewellery	52.7	57.1	67.4	91.8	115.3	+118.8
Toys and games	62.3	69.3	81.9	94.9	108.9	+74.8
Sporting goods and luggage	81.3	93.2	116.3	137.9	163.8	+101.5
Stationery, books and magazines	73.5	82.5	101.0	125.3	153.7	+109.1
Gasoline, oil, auto accessories, repairs and supplies	58.8	...	81.4	93.2	112.5	+91.3
Receipts from meals and lunches	64.1	70.0	79.2	95.2	113.4	+76.9
Receipts from repairs and services	107.8	127.9	155.4	164.3	212.1	+96.8
All other departments						
Total, all departments	2,852.3	3,184.1	3,687.9	4,306.8	5,059.3	+77.4

¹Subject to revision.

18.5 Retail sales of new motor vehicles, 1967-74

Year	Passenger cars		Trucks and buses		Total	
	No.	\$'000	No.	\$'000	No.	\$'000
1967	679,435	2,210,309	135,872	588,057	815,307	2,798,366
1968	741,915	2,481,141	147,538	634,648	889,453	3,115,789
1969	760,803	2,603,835	156,702	719,044	917,505	3,322,879
1970	640,360	2,158,543	133,881	653,787	774,241	2,812,330
1971	780,762	2,737,516	159,570	815,535	940,332	3,553,051
1972	858,959	3,170,305	206,662	1,142,754	1,065,621	4,313,059
1973	970,828	3,835,173	255,870	1,535,201	1,226,698	5,370,374
1974	942,797	4,016,879	306,507	1,900,106	1,249,304	5,916,985

18.6 Retail sales of new motor vehicles by type and source, 1967-74

Year	Passenger cars		Trucks and buses		Total	
	Canadian/US	Overseas	Canadian/US	Overseas	Canadian/US	Overseas
	<i>Number</i>					
1967	605,049	74,836	133,330	2,542	738,379	77,378
1968	637,393	104,522	142,241	5,297	779,634	109,819
1969	638,270	122,533	149,597	7,105	787,867	129,638
1970	497,185	143,175	124,664	9,217	621,849	152,392
1971	592,319	188,443	147,001	12,569	739,320	201,012
1972	653,933	205,026	189,577	17,085	843,510	222,111
1973	782,914	187,914	235,449	20,421	1,018,363	208,335
1974	796,840	145,957	287,686	18,821	1,084,526	164,778
	<i>Thousand dollars</i>					
1967	2,045,733	164,576	581,367	6,690	2,627,100	171,266
1968	2,238,712	242,429	620,184	14,464	2,858,896	256,893
1969	2,308,109	295,726	699,536	19,508	3,007,645	315,234
1970	1,795,709	362,834	628,532	25,255	2,424,241	388,089
1971	2,225,121	512,395	779,544	35,991	3,004,665	548,386
1972	2,554,779	615,526	1,087,306	55,448	3,642,085	670,974
1973	3,197,173	638,000	1,466,448	68,753	4,663,621	706,753
1974	3,455,140	561,739	1,831,532	68,574	5,286,672	630,313

18.7 Retail sales in campus book stores, academic years 1970-71 to 1973-74

Province and items sold	1970-71 \$'000	1971-72 \$'000	1972-73 \$'000	1973-74 \$'000	Percentage change 1972-73 to 1973-74
Province					
Atlantic region	3,258	3,759	3,779	4,148	+9.8
Nova Scotia	1,417	1,599	1,578	1,750	+10.9
New Brunswick	1,094	1,234	1,199	1,323	+10.3
Quebec	6,366	6,895	8,290	9,541	+15.1
Ontario	16,440	18,240	19,251	21,871	+13.6
Manitoba	2,129	2,293	2,481	2,772	+11.7
Saskatchewan	1,690	1,816	1,791	1,954	+9.1
Alberta	4,170	4,327	4,574	5,140	+12.4
British Columbia	3,766	3,584	3,978	4,542	+14.2
Canada	37,819	40,914	44,144	49,968	+13.2
Items sold					
Text books ¹	24,306	27,140	29,201	33,108	+13.4
Trade books ²	4,961	5,383	5,103	5,338	+4.6
Stationery and supplies	5,703	5,673	6,271	7,506	+19.7
Miscellaneous ³	2,849	2,718	3,569	4,016	+12.5

¹Includes all professional and educational books.²Includes hard covers and paperbacks.³Includes newspapers, magazines, periodicals and sundries.

18.8 Vending machine operators, 1961-73

Year	Firms No.	Annual change %	Machines ¹ No.	Annual change %	Sales \$'000	Annual change %
1961	579	+11.1	65,028	+36.1	44,959.7	+16.1
1962	600	+3.6	73,397	+12.9	57,799.2	+28.6
1963	673	+12.2	78,477	+6.9	67,580.0	+16.9
1964	651	-3.3	75,392	-3.9	78,561.8	+16.2
1965	764	+17.4	85,091	+12.9	89,815.4	+14.3
1966	769	+0.7	84,154	-1.1	107,539.6	+19.7
1967	790	+2.8	91,289	+8.5	119,650.9	+11.3
1968	791	+0.1	95,867	+5.0	127,058.6	+6.2
1969	765	..	100,948	+5.3	142,909.6	+12.5
1970	768	..	103,751	+2.8	156,822.1	+9.7
1971	697	-9.2	97,965	-5.6	162,249.1	+3.5
1972 ²	692	-0.7	106,758	+9.0	178,909.0	+10.3
1973	648	-6.4	104,253	-2.3	207,081.4	+15.7

¹Maximum during the year; ovens, coin and bill changers are excluded.²Beginning 1972, data of small operators excluded.

18.9 Sales through vending machines, distribution and percentage change, by selected type of machine, 1972 and 1973

Type of machine	1972		1973		Percentage change 1972-73
	\$'000	%	\$'000	%	
Cigarettes	87,428.7	48.9	99,730.9	48.2	+14.1
Beverages					
Coffee	28,241.7	15.8	32,030.2	15.5	+13.4
Soft drinks					
Can or bottle	13,950.4	7.8	13,406.3	6.5	-3.9
Disposable cups	15,095.1	8.4	17,838.9	8.6	+18.2
Packaged milk	4,185.0	2.3	6,523.9	3.2	+55.9
Other beverages	..	—	302.3	0.1	..
Confections and foods					
Bulk confectionery	1,608.1	0.9	2,544.9	1.2	+58.3
Packaged confectionery	8,128.6	4.5	10,193.3	4.9	+25.4
Pastries	7,452.5	4.2	6,250.4	3.0	-16.1
Snack food	..	—	1,536.9	0.7	..
Hot canned foods and soups	2,779.1	1.6	3,384.5	1.6	+21.8
Ice cream	433.2	0.2	684.2	0.3	+57.9
Fresh food (casseroles, hot dogs, sandwiches, salads, etc.)	9,311.3	5.2	12,139.5	5.9	+30.4
Other vending machines for food	..	—	135.8	0.1	..
All other food and non-food	295.3	0.2	379.4	0.2	+28.5
Total	178,909.0	100.0	207,081.4	100.0	+15.7

18.10 Direct sales by commodity, 1970-73

Commodity	1970		1971		1972		1973		Percentage change 1972-73
	\$'000		\$'000		\$'000		\$'000		
Meat, fish and poultry	10,672		11,612		12,571		14,263		+13.5
Frozen food plans	19,282		18,062		23,568		29,352		+24.5
Dairy products	184,000		185,000		184,075 ^r		187,757 ^p		+2.0
Bakery products	42,471		42,897		42,082 ^r		45,533 ^p		+8.2
All other foods and beverages	34,308		33,148 ^r		34,362 ^r		35,712		+3.9
Canvas, awnings, sails, tents, etc.	5,314		6,437		5,549		6,032		+8.7
Clothing	13,284		12,981		9,244		9,878		+6.9
Fur goods	6,115		7,046		7,067		8,262		+16.9
Furniture, re-upholstery and repairs	31,000		32,535		35,980 ^r		39,290		+9.2
Books	51,197		53,975		63,287		72,022		+13.8
Newspapers	120,005		130,000		136,670 ^r		146,237 ^p		+7.0
Magazines	14,013		16,348		18,227		20,135		+10.5
Aluminum windows, doors, screens and awnings	15,656		16,944		18,386		21,354		+16.1
Dinnerware, kitchenware and utensils	26,863		25,535		31,625		38,731		+22.5
Sail boats and pleasure craft	8,397		8,799		9,186		12,528		+36.4
Household electrical appliances	38,154		46,582		63,053		84,750		+34.4
Pharmaceuticals and medicines	5,964		4,897		5,172		3,455		-33.2

18.10 Direct sales by commodity, 1970-73 (concluded)

Commodity	1970 \$'000	1971 \$'000	1972 \$'000	1973 \$'000	Percentage change 1972-73
Brushes, brooms, mops and household soaps and cleaners	22,270	23,471	27,352	26,099	-4.6
Cosmetics and costume jewellery	77,266	77,744	91,386	102,972	+12.7
Phonograph records	14,180	14,260	26,421	23,190	-12.2
Greenhouse flowers and nursery seeds, stocks, etc.	16,643	19,688	25,461	29,499	+15.9
Miscellaneous ¹	60,819	61,509	63,936	77,082	+20.6
Total, all commodities	817,873	849,470 ^r	934,660 ^r	1,034,133	+10.6

¹Includes leather goods, textiles, stamps, coins and personal stationery and sales of merchandise to credit card holders of gasoline oil companies, etc.

18.11 Methods of distribution of direct sales, 1973

Commodity	By door-to-door canvassing %	By mail %	From manu- facturers' premises %	Through other channels ¹ %
Meat, fish and poultry	—	—	86.1	13.9
Frozen food plans	—	—	100.0	—
Dairy products	100.0	—	—	—
Bakery products	100.0	—	—	—
All other foods and beverages	59.8	—	4.1	36.1
Canvas, awnings, sails, tents, etc.	7.6	—	92.4	—
Clothing	21.9	—	78.1	—
Fur goods	—	—	100.0	—
Furniture, re-upholstery and repairs	—	—	100.0	—
Books	32.1	67.9	—	—
Newspapers	87.6	9.6	0.3	2.5
Magazines	—	100.0	—	—
Aluminum windows, doors, screens and awnings	55.1	—	44.9	—
Dinnerware, kitchenware and utensils	100.0	—	—	—
Sail boats and pleasure craft	—	—	100.0	—
Household electrical appliances	74.0	—	26.0	—
Pharmaceuticals and medicines	87.4	12.6	—	—
Brushes, brooms, mops and household soaps and cleaners	100.0	—	—	—
Cosmetics and costume jewellery	98.7	—	1.3	—
Phonograph records	—	100.0	—	—
Greenhouse flowers and nursery seeds, stocks, etc.	—	7.8	48.5	43.7
Miscellaneous	4.4	59.3	33.4	2.9
Total, all commodities	63.4	15.0	18.4	3.2

¹Includes roadside stands, market stalls, shows, exhibitions and other display and demonstration venues.

18.12 Sales finance company new paper purchased and balances outstanding, by class of goods, 1971-74 (million dollars)

Class of goods	Paper purchased				Balances outstanding Dec. 31			
	1971	1972	1973	1974 ^p	1971	1972	1973	1974 ^p
Consumer goods	806	941	1,080	1,104	890	1,025	1,150	1,198
New passenger cars	359	445	515	746	{	426	530	609
Used passenger cars	177	179	186					
Radio and television sets, household appliances, furniture and other consumer goods	270	317	379	358	273	291	341	337
Commercial and industrial	870	1,076	1,383	1,426	1,053	1,204	1,529	1,822
New commercial vehicles	455	576	784	955	{	495	607	826
Used commercial vehicles	75	94	111					
Other commercial goods	340	406	488	471	485	511	588	673
Total	1,676	2,017	2,463	2,530	1,943	2,229	2,679	3,020

18.13 Consumer credit balances outstanding, selected holders, 1954-74 (million dollars)

Item	1954	1964	1969	1972	1973	1974
Instalment financing by sales finance and consumer loan companies ¹	506	1,089	1,371	1,025	1,151	1,198
Cash loans						
Under \$1,500	89	575	596	383	341	298
Over \$1,500	112	275	1,079	1,238	1,421	1,507
Chartered banks	351	1,793	4,157	7,144	8,878	10,817
Quebec savings banks	2	15	24	30	36	44
Life insurance companies policy loans	240	398	660	813	884	1,060
Credit unions and caisses populaires	151	705	1,401	2,000	2,420	2,830
Department stores	186	518	705	823	961	1,062
Furniture, TV, radio and household appliance store loans	157	170	152	169	183	188
Other retail dealers	342	548	672	755	841	912
Other credit card issuers	—	59	153	233	249	275
Public utility companies	—	111	164	231	242	268
Trust and mortgage companies	—	—	—	46	82	145
Total	2,136	6,254	11,134	14,890	17,688	20,606

¹Data for years after 1970 show principal amount outstanding only, excludes unearned interest and other finance charges.

18.14 Summary statistics of major traveller accommodation groups, 1972

Accommodation group	Locations No.	Rooms No.	Cabins and cottages No.	Tent trailer spaces No.	Total receipts \$'000
Hotels	5,139	173,114	—	—	1,376,679
Motels	4,128	72,555	3,232	8,090	220,867
Tourist homes	512	1,467	74	161	3,885
Tourist courts and cabins	3,077	1,197	24,252	9,033	31,936
Outfitters	1,843	611	13,464	6,717	37,469
Tent and trailer campgrounds	2,517	164	2,755	225,625	37,137
Total	17,216	249,108	43,777	249,626	1,707,973

18.15 Locations and receipts of major traveller accommodation groups, by province, 1972

Province or territory	Hotels		Motels		Total receipts ¹	
	Locations No.	Receipts \$'000	Locations No.	Receipts \$'000	\$'000	% distri- bution
Newfoundland	71	18,629	20	2,758	23,484	1.4
Prince Edward Island	17	2,079	60	3,057	6,530	0.4
Nova Scotia	90	20,635	158	10,445	33,266	1.9
New Brunswick	67	14,420	170	10,658	26,959	1.6
Quebec	1,917	326,186	734	42,754	384,427	22.5
Ontario	1,260	417,369	1,505	74,542	545,448	31.9
Manitoba	276	100,116	121	6,466	110,265	6.5
Saskatchewan	444	78,452	157	8,210	90,271	5.3
Alberta	441	170,258	325	19,374	193,834	11.3
British Columbia	502	212,897	845	39,889	267,002	15.6
Yukon Territory	39	7,227	25	1,973	10,438	0.6
Northwest Territories	15	8,411	8	741	9,906	0.6
Canada	5,139	1,376,679	4,128	220,867	1,707,973 ²	100.0

¹Includes tourist homes, tourist courts and cabins, outfitters, and tent and trailer campgrounds.

²Includes federal parks.

18.16 Restaurant receipts, by province, 1970-74

Province	1970 \$'000	1971 \$'000	1972 \$'000	1973 \$'000	1974 \$'000	Percentage change 1970-74
Newfoundland	10,813	11,987	13,069	15,479	16,859	55.9
Prince Edward Island	3,153	3,191	3,208	3,650	4,048	28.4
Nova Scotia	30,183	31,267	33,981	37,072	37,871	25.5
New Brunswick	24,380	25,756	28,005	30,935	32,544	33.5
Quebec	411,597	439,376	481,131	536,585	574,620	39.6
Ontario	423,176	446,697	483,234	554,188	648,947	53.4

8.16 Restaurant receipts, by province, 1970-74 (concluded)

Province	1970 \$'000	1971 \$'000	1972 \$'000	1973 \$'000	1974 \$'000	Percentage change 1970-74
Manitoba	57,285	59,084	63,369	71,178	87,068	52.0
Saskatchewan	35,320	36,198	38,486	43,651	52,253	47.9
Alberta	102,901	105,327	107,765	114,819	134,953	31.1
British Columbia ¹	120,084	127,358	134,359	153,833	182,342	51.8
Canada	1,218,892	1,286,241	1,386,607	1,561,390	1,771,505	45.3

¹Includes the Yukon Territory and Northwest Territories.

18.17 Receipts, taxes and paid admissions of motion picture and drive-in theatres, 1967-73

Year	Motion picture theatres		Drive-in theatres	
	Receipts and taxes \$'000	Paid admissions '000	Receipts and taxes \$'000	Paid admissions '000
1967	97,233	85,531	13,547	12,042
1968	106,309	84,937	15,588	12,252
1969	109,848	78,918	16,691	11,308
1970	119,802	80,826	18,164	11,489
1972 ¹	131,399	81,241	19,054	10,559
1973	139,541	77,438	22,171	11,581

¹No survey was conducted in 1971.

18.18 Billings of advertising agencies, 1970, 1972 and 1973 (thousand dollars)

Type of medium or service	1970	1972	1973
Media billings			
Print media	159,576	171,983	193,386
Television	142,380	171,359	192,171
Radio	56,248	58,428	63,045
Outdoor	12,132	13,480	13,923
Total, media billings	370,336	415,250	462,525
Production cost			
Print	37,168	48,485	47,380
Television	28,354	28,201	38,512
Radio	5,825	5,039	5,651
Outdoor	1,377	2,505	2,433
Direct mail	17,956	20,782	16,889
Other	1,716	2,942	3,727
Total, production cost	92,396	107,954	114,592
Total, advertising billings	462,732	523,204	577,117
Research			
Market surveys, etc.	7,620	11,862	9,045
Total, gross billings	470,352	535,066	586,162

18.19 Firms, total receipts and average funeral cost, by province, 1972

Province	Firms No.	Total receipts \$'000	Average funeral cost ¹ \$
Newfoundland	16	1,215	488
Prince Edward Island	19	616	499
Nova Scotia	68	4,556	576
New Brunswick	50	3,339	588
Quebec	363	32,811	794
Ontario	492	51,902	721
Manitoba	52	5,132	537
Saskatchewan	69	4,817	522
Alberta	52	6,783	530
British Columbia, Yukon Territory and Northwest Territories	75	8,289	469
Canada	1,256	119,460	665

¹Includes cost of casket but excludes vaults and extra charges.

18.20 Revenue and expenditure of religious organizations, by province, 1971

Province	Establishments No.	Revenue \$'000	Expenditure \$'000	Difference \$'000
Newfoundland	562	10,427	8,657	1,770
Prince Edward Island	207	3,325	2,719	606
Nova Scotia	1,275	22,531	20,370	2,161
New Brunswick	1,102	16,424	14,878	1,546
Quebec	3,561	100,780	91,166	9,614
Ontario	9,645	289,894	270,491	19,403
Manitoba	1,664	27,167	24,790	2,377
Saskatchewan	2,533	26,299	24,952	1,347
Alberta	2,578	45,026	42,452	2,574
British Columbia	2,297	44,741	41,551	3,190
Yukon Territory	46	336	330	6
Northwest Territories	77	356	351	5
Canada	25,547	587,304	542,705	44,599

18.21 Sales of wholesale merchants, by kind of business, 1972-74

Kind of business	1972P \$'000,000	1973P \$'000,000	1974P \$'000,000	Per- centage change 1973-74
Consumer goods trades	14,148.6	16,135.9	18,866.1	+16.9
Automotive parts and accessories	1,721.1	2,060.4	2,529.2	+22.8
Motor vehicles	741.8	841.8	917.2	+9.0
Drugs and drug sundries	700.6	754.7	892.6	+18.3
Clothing and furnishings	334.3	358.2	396.2	+10.6
Footwear	75.4	83.3	96.0	+15.2
Other textiles and clothing accessories	656.5	705.3	851.3	+20.7
Household electrical appliances	673.1	801.6	897.0	+11.9
Tobacco, confectionery and soft drinks	1,081.0	1,182.5	1,342.7	+13.5
Fresh fruits and vegetables	607.0	653.2	751.3	+15.0
Meat and dairy products	871.6	1,060.7	1,083.2	+2.1
Floor coverings	318.6	369.6	424.3	+14.8
Groceries and food specialties	4,223.1	4,799.7	5,804.0	+20.9
Hardware	677.4	754.7	903.8	+19.8
Other consumer goods	1,467.1	1,710.4	1,977.5	+15.6
Industrial goods trades	14,018.0	17,945.3	24,344.1	+35.7
Coal and coke	49.0	43.1	69.7	+61.6
Grain	1,225.3	2,098.9	4,267.3	+103.3
Electrical wiring supplies, construction materials, apparatus and equipment	527.0	626.3	798.2	+27.5
Other construction materials and supplies, including lumber	3,730.7	4,719.7	5,358.1	+13.5
Farm machinery	958.3	1,258.8	1,607.0	+27.7
Industrial and transportation equipment and supplies	2,596.1	3,168.7	3,888.5	+22.7
Commercial, institutional and service equipment and supplies	666.0	789.1	940.5	+19.2
Newsprint, paper and paper products	448.3	518.9	694.3	+33.8
Scientific and professional equipment and supplies	367.6	407.8	482.9	+18.4
Iron and steel	1,446.0	1,758.2	2,736.3	+55.6
Junk and scrap	439.4	619.5	1,024.2	+65.3
Other industrial goods	1,564.2	1,936.1	2,477.1	+27.9
Total, all trades	28,166.6	34,081.2	43,210.2	+26.8

18.22 Sales of farm implements and equipment, by province and by major group, 1971-74

Province and major group	1971 \$'000	1972 \$'000	1973 \$'000	1974P \$'000
Province	9,778	11,033	14,184	17,566
Atlantic provinces	45,526	56,559	67,343	72,592
Quebec	90,055	114,712	142,149	163,827
Ontario	30,736	38,003	60,971	68,916
Manitoba	71,897	101,111	143,602	161,651
Saskatchewan	68,358	86,693	130,073	143,793
Alberta	9,815	12,134	15,544	18,644
British Columbia	326,165	420,245	573,866	646,989
Total				

18.22 Sales of farm implements and equipment, by province and by major group, 1971-74 (concluded)

Province and major group	1971 \$'000	1972 \$'000	1973 \$'000	1974P \$'000
Major group				
Tractors — farm use	117,370	162,691	212,492	..
Ploughs	9,534	11,519	12,192	..
Tilling, cultivating and weeding machinery	19,395	26,094	40,769	..
Planting, seeding and fertilizing machinery	16,402	17,957	23,638	..
Haying machinery	21,819	29,663	41,489	..
Harvesting machinery	68,182	78,162	114,074	..
Machines for preparing crops for market or for use	18,168	23,682	33,436	..
Farm wagons, boxes and sleighs	10,821	15,848	23,901	..
Barn equipment	14,374	16,712	22,864	..
Farm dairy machinery and equipment	7,083	11,631	12,857	..
Spraying and dusting equipment	2,538	2,887	4,430	..
Pump and irrigation equipment and miscellaneous farm equipment	20,479	23,401	31,722	..

18.23 New machinery and equipment sales, by commodity group, 1971-73

Commodity group	1971		1972		1973	
	Units No.	Value \$'000	Units No.	Value \$'000	Units No.	Value \$'000
Tractors, crawler-type	2,035	96,255	2,502	127,817	3,016	148,271
Tractors, wheel-type	976	17,148	1,373	25,094	1,940	32,964
Front-end loaders, wheel-type	1,657	73,451	2,245	93,752	2,775	123,830
Attachments for tractors and front-end loaders	805	2,826	807	2,837	1,925	5,124
Scrapers	153	13,750	132	13,525	183	19,382
Off-highway haulers, heavy duty	385	63,027	..	..	300	43,556
Excavator/cranes, crawler mounted	400	35,280	584	45,391	711	60,011
Excavator/cranes, rubber tire mounted	329	25,647	415	30,438	535	37,122
Excavator/crane attachments	155	1,089	193	971	172	813
Tower and climbing cranes	12	740	..	..	..	..
Trenchers and ditchers	134	2,043	123	1,884	251	2,971
Graders, motor	580	21,631	637	24,858	745	31,566
Logging skidders	826	16,892	1,367	28,900	1,982	48,344
Compactors and rollers, vibratory, hand-guided	988	2,523	1,243	3,342	1,426	3,308
Compactors, vibratory	139	2,187	272	3,904	318	6,161
Compactors and rollers, static, self-propelled	165	2,118	204	2,763	306	3,327
Air compressors	791	8,796	920	9,305	1,143	12,620
Rock drills	559	6,918	588	5,354	..	..
Pumps, contractors' type	3,245	2,002	5,011	3,622	8,362	6,643
Contractors' tools, hand-held	1,423	740	1,768	980	1,918	1,241
Concrete machinery	1,124	5,615	1,437	9,061	1,691	11,729
Asphalt equipment	111	6,986	158	7,196	204	9,152
Aggregate processing equipment	..	15,312	..	24,248	..	21,719
All other construction type machinery and attachments	..	86,120	..	55,639	..	98,205
All repair and consumable parts	..	284,322	..	260,211	..	330,868
Total	..	793,420	..	811,434	..	1,067,794

18.24 Summary statistics of co-operative marketing and purchasing associations, 1969-73 and by province, 1971-73

Year and province		Associations	Share-holders or members	Farm marketings \$'000	Sales of merchandise \$'000	Total business ¹ \$'000
1969		1,244	1,388,000	1,231,900	721,400	1,995,600
1970		1,230	1,431,000	1,288,400	743,100	2,074,400
1971		1,210	1,476,000	1,403,100	819,000	2,266,400
1972		1,120	1,491,000	1,708,300	906,300	2,666,900
1973		1,116	1,527,000	2,176,100	1,178,600	3,415,700
Newfoundland	1971	36	14,000	1,500	15,600	17,700
	1972	37	16,000	1,700	19,100	21,400
	1973	37	17,000	1,700	24,000	26,100
Prince Edward Island	1971	18	10,000	4,300	10,500	15,000
	1972	14	10,000	3,700	12,400	16,400
	1973	17	10,000	5,200	14,700	20,000
Nova Scotia	1971	81	35,000	45,000	33,000	79,300
	1972	81	34,000	52,800	37,300	92,000
	1973	84	35,000	72,700	45,300	120,000
New Brunswick	1971	43	18,000	10,000	20,800	31,400
	1972	42	18,000	10,900	24,300	36,000
	1973	39	20,000	12,300	29,600	42,700

18.24 Summary statistics of co-operative marketing and purchasing associations, 1969-73 and by province, 1971-73 (concluded)

Year and province		Associations	Share-holders or members	Farm marketings \$'000	Sales of merchandise \$'000	Total business ¹ \$'000
Quebec	1971	372	143,000	214,600	197,200	419,100
	1972	340	145,000	263,400	211,500	481,400
	1973	350	172,000	271,100	283,400	564,200
Ontario	1971	132	110,000	88,600	132,700	225,900
	1972	105	107,000	101,700	136,100	242,600
	1973	105	101,000	116,400	169,300	290,300
Manitoba	1971	75	180,000	53,500	63,600	130,800
	1972	74	182,000	59,600	68,800	146,100
	1973	73	185,000	88,600	83,600	192,300
Saskatchewan	1971	247	445,000	468,700	145,600	624,300
	1972	236	443,000	617,300	159,900	788,700
	1973	229	437,000	865,700	187,100	1,068,200
Alberta	1971	128	314,000	267,000	120,900	391,200
	1972	112	323,000	314,900	144,300	463,400
	1973	114	326,000	397,200	187,500	588,700
British Columbia	1971	74	60,000	126,200	53,800	182,400
	1972	75	65,000	138,900	59,300	202,200
	1973	63	67,000	165,700	75,500	244,800
Interprovincial	1971	4	147,000	123,600	25,200	149,200
	1972	4	148,000	143,300	33,100	176,600
	1973	5	157,000	179,500	78,500	258,400

¹Includes service revenue and other income.**18.25 Sales of products handled by marketing and purchasing co-operatives, 1970-73 (thousand dollars)**

Product	1970	1971	1972	1973
Marketing	1,288,400	1,403,100	1,708,300	2,176,100
Dairy products	401,100	412,700	478,500	514,000
Fruits and vegetables	47,600	48,900	48,800	58,500
Grains and seeds	526,400	627,400	811,300	1,106,400
Livestock and livestock products	242,000	235,400	281,900	363,200
Eggs and poultry	57,500	61,300	66,600	98,300
Miscellaneous	13,800	17,400	21,200	35,600
Purchasing	743,100	819,000	906,300	1,178,600
Food products	239,500	271,500	295,500	357,400
Clothing and home furnishings	26,500	26,900	31,100	35,500
Hardware	56,000	62,600	75,100	102,400
Petroleum products	119,700	127,300	140,800	166,200
Feed	152,900	159,400	159,500	236,700
Fertilizer and spray material	42,300	49,800	62,700	88,900
Machinery and equipment	29,700	39,500	51,700	77,600
Building material	39,700	45,100	48,600	59,600
Miscellaneous	36,800	36,900	41,300	54,300
Total	2,031,500	2,222,100	2,614,600	3,354,700

18.26 Value and volume of sales of alcoholic beverages, years ended Mar. 31, 1972 and 1973

Province or territory	Spirits		Wines		Beer		Total	
	1972	1973	1972	1973	1972	1973	1972	1973
Value \$'000								
Nfld.	17,963	21,398	1,640	2,230	28,179	33,731	47,782	57,359
PEI	5,988	6,836	771	927	4,202	4,764	10,961	12,527
NS	38,419	44,172	6,925	7,839	33,285	37,093	78,629	89,104
NB	24,459	27,704	5,196	5,677	25,514	28,615	55,169	61,996
Que.	194,834	204,909	59,635	67,707	225,097	244,242	479,566	516,858
Ont.	392,738	431,460	80,265	97,673	317,155	355,012	790,158	884,145
Man.	53,448	58,902	8,359	9,522	41,771	43,821	103,578	112,245
Sask.	40,519	51,347	6,470	6,791	37,086	36,204	84,075	94,342
Alta.	89,245	106,766	18,566	23,347	71,142	73,699	178,953	203,812
BC	132,328	148,877	33,581	40,370	94,961	104,239	260,870	293,486
YT	2,084	2,390	400	494	2,038	2,143	4,522	5,027
NWT	3,152	3,626	565	686	2,792	3,184	6,509	7,496
Canada	995,177	1,108,387	222,373	263,263	883,222	966,747	2,100,772	2,338,397
Volume '000 gal								
Nfld.	469	555	120	155	6,702	8,041	7,291	8,751
PEI	179	164	85	84	1,351	1,361	1,615	1,609
NS	1,050	1,157	685	735	10,524	11,373	12,259	13,265
NB	628	705	526	558	7,457	8,322	8,611	9,585
Que.	5,491	5,759	5,840	6,305	109,840	119,448	121,171	131,512
Ont.	11,820	12,527	7,985	8,687	141,231	145,782	161,036	166,996
Man.	1,562	1,715	1,013	1,125	15,547	16,145	18,122	18,985

18.26 Value and volume of sales of alcoholic beverages, years ended Mar. 31, 1972 and 1973 (concluded)

Province or territory	Spirits		Wines		Beer		Total	
	1972	1973	1972	1973	1972	1973	1972	1973
	Volume '000 gal							
Sask.	1,152	1,458	762	748	13,117	12,676	15,031	14,882
Alta.	2,420	2,853	2,231	2,584	26,757	26,737	31,408	32,174
BC	4,058	4,267	3,828	4,299	38,692	40,930	46,578	49,496
YT	52	58	33	41	516	534	601	633
NWT	71	92	43	59	592	707	706	858
Canada	28,952	31,310	23,151	25,380	372,326	392,056	424,429	448,746

18.27 Revenue of all governments' specifically derived from the control, taxation and sale of alcoholic beverages, years ended Mar. 31, 1970-73 (thousand dollars)

Government	1970	1971	1972	1973
Government of Canada	396,260	423,518	471,936	499,819
Provincial and territorial governments				
Newfoundland	12,916	14,450	17,142	20,740
Prince Edward Island	3,665	3,983	4,510	5,182
Nova Scotia	23,935	26,249	28,269	33,648
New Brunswick	17,662	19,279	22,117	24,487
Quebec	111,287	116,102	142,618	151,997
Ontario	180,404	195,008	221,789	255,773
Manitoba	27,941	30,760	34,347	37,745
Saskatchewan	26,476	27,895	31,360	37,594
Alberta	47,372	56,209	64,493	73,799
British Columbia	61,662	66,181	85,419	97,484
Total, provincial governments	513,320	556,116	652,064	738,449
Yukon Territory	1,808	1,865	1,985	2,303
Northwest Territories	2,148	2,404	2,817	3,295
Total, provincial and territorial governments	517,276	560,385	656,866	744,047
Total, all governments	913,536	983,903	1,128,802	1,243,866

*Revenue of the Government of Canada comprises excise duties, excise taxes, import duties and certain fees and licences. Revenue of provinces and territories includes revenue collected directly by the provincial and territorial governments as well as revenue of liquor authorities but excludes revenue resulting from general retail sales taxation.

18.28 Value of total international trade of Canada, selected years 1956-74 (million dollars)

Year	Exports			Imports			Balance of trade, excess of exports (+) imports (-)
	Domestic	Re-exports	Total	Dutiable	Free	Total	
1956†	4,790	73	4,863	3,223	2,400	5,623	-760
1961	5,755	140	5,895	3,115	2,653	5,769	+126
1966	11,121	255	11,376	5,978	5,097	11,075	+301
1971	17,397	423	17,820	6,535	9,083	15,618	+2,202
1972	19,661	479	20,140	8,023	10,647	18,669	+1,471
1973	24,719	582	25,301	9,525	13,777	23,303	+1,998
1974	31,293	760	32,053	12,979	18,548	31,527	+526

18.29 Trade of Canada with Commonwealth and preferential countries, and other countries, selected years 1961-74

Item and year	United States		United Kingdom		Other Commonwealth and preferential countries		Other countries	
	Value \$'000,000	% of total	Value \$'000,000	% of total	Value \$'000,000	% of total	Value \$'000,000	% of total
Domestic exports								
1961	3,107	54.0	909	15.8	329	5.7	1,410	24.5
1966	6,028	59.8	1,123	11.2	547	5.4	2,373	23.6
1971	11,683	67.2	1,380	7.9	679	3.9	3,654	21.0
1972	13,575	69.0	1,370	7.0	631	3.2	4,085	20.8
1973	16,612	67.2	1,582	6.4	861	3.5	5,664	22.9
1974	20,629	65.9	1,878	6.0	1,083	3.5	7,702	24.6
Imports								
1961	3,864	67.0	618	10.7	292	5.1	995	17.2
1966	7,136	72.3	645	6.6	416	4.2	1,670	16.9
1971	10,951	70.1	837	5.4	622	4.0	3,208	20.5
1972	12,878	69.0	949	5.1	775	4.1	4,067	21.8
1973	16,484	70.8	1,005	4.3	986	4.2	4,828	20.7
1974	21,206	67.3	1,128	3.6	1,265	4.0	7,928	25.1

18.30 Values of total exports and imports, by geographic region and country, 1972-74 (thousand dollars)

Region and country	Total exports		Imports	
	1972	1973	1972	1973
WESTERN EUROPE				
United Kingdom	1,385,051	1,598,708	1,894,747 (3)	1,005,397
Gibraltar	28	12	118	6
Ireland	15,385	16,365	32,768	26,558
Malta and Gozo	1,575	328	5,477	460
Austria	10,272	12,571	18,239	59,261
Belgium and Luxembourg	200,598	285,249	367,092 (9)	103,819
Denmark	19,082	24,001	23,351	90,131
Finland	10,465	17,028	48,353	57,042
France	160,234	217,803	18,390	21,164
Germany, Federal Republic of	318,560	447,177	314,925 (10)	326,827
Greece	23,911	60,896	542,344 (4)	512,642
Iceland	937	783	45,534	23,387
Italy	203,978	297,943	1,476	226
The Netherlands	260,482	287,231	462,788 (5)	237,289
Norway	154,428	181,510	386,777 (8)	118,052
Portugal	17,522	19,704	233,062 (12)	77,608
Spain	56,806	67,793	28,655	25,802
Sweden	47,022	60,786	119,686 (18)	61,591
Switzerland	45,392	69,149	110,005 (19)	166,301
Total, Commonwealth and preferential countries	1,402,039	1,615,613	1,933,109	1,032,421
European Economic Community	1,143,852	1,335,403	2,073,927	1,392,784
Other countries	385,837	514,221	514,120	610,179
Total, Western Europe	2,931,728	3,665,237	4,706,059	3,035,384
EASTERN EUROPE				
Albania	4,303	12,330	6,305	16
Bulgaria	607	5,288	1,666	1,709
Czechoslovakia	4,456	9,958	42,793	4,143
German Democratic Republic	9,600	3,035	34,196	61,830
Hungary	5,269	7,674	5,747	7,617
Poland	31,617	45,195	11,606	15,714
Romania	13,111	12,862	29,493	43,902
Union of Soviet Socialist Republics	285,492	292,276	11,778	25,806
Yugoslavia	25,893	37,251	22,984	23,117
Total, Eastern Europe	380,348	421,067	188,378	15,911
MIDDLE EAST				
Bahrain	448	788	109,968	198,055
Cyprus	1,566	2,277	5,264	264
Emirates United Arab	787	1,920	518	3,021
Qatar	232	435	27,064	84,074 (25)
Ethiopia	361	520	640	—
Iran	23,647	55,430	139	228
Iraq	3,620	22,791	70,881	131,676
Israel	25,434	19,066	12,858	20,550
Jordan	405	37,101	16,701	22,492
Kuwait	2,750	580	3	—
Lebanon	14,096	1,849	2,593	3,694
Libya	4,705	21,342	3,302	22,497
		12,899	40,619	30,556

18.30 Values of total exports and imports, by geographic region and country, 1972-74 (thousand dollars) (continued)

Region and country	Total exports		Imports	
	1972	1973	1972	1973
Saudi Arabia	7,122	13,349	54,636	60,380
Somalia	2,322	3,833	1	1
Sudan	2,338	3,233	162	161
Syria	7,770	2,035	427	21
Turkey	13,202	23,932	2,812	3,899
United Arab Republic	5,748	3,069	403	492
Yemen, People's Democratic Republic of (Southern Yemen)	27	851	603	23,865
Total, Commonwealth and preferential countries	2,843	5,420	33,486	51,572
Total, other countries	111,510	180,099	206,140	311,039
Total, Middle East	114,353	185,520	239,626	362,611
OTHER AFRICA				
Gambia	96	99	299	—
Ghana	8,621	8,621	11,956	6,559
Kenya	5,207	6,195	5,440	10,012
Malawi	357	1,084	942	11,774
Mauritius and Dependencies	265	423	18,129	11,522
Nigeria	20,950	22,957	82,158	29,387
Sierra Leone	274	22,178	60,778	82,158
South Africa, Republic of	44,501	65,566	3,214	53,755
Southern Rhodesia	17	3	58,942	3,804
Tanzania	8,416	4,833	1	81,071
Uganda	867	416	4,144	4,615
Zambia	2,033	6,933	4,478	9,112
Zimbabwe	8,738	1,433	2,202	3,549
Total, Commonwealth Africa, n.e.s.	29,179	27,607	5,852	7,354
Algeria	747	152,856	1,193	4,814
Angola	562	2,063	45,145	6,767
Cameroon	1,262	1,573	657	53,585
Dahomey	5,570	1,340	21	94,484
French Africa, n.e.s.	709	4,536	118	3,338
Gabon	66	1,831	1,502	2
Guinea	3,479	242	50	201
Ivory Coast	1,618	1,877	1,847	2,418
Liberia	464	3,375	820	2,331
Madagascar	445	579	1,509	4,096
Mali	5,864	144	544	821
Morocco	1,202	2,517	727	586
Mozambique	345	2,762	3,831	4,780
Portuguese Africa, n.e.s.	1,967	742	—	1,801
Senegal	379	1,364	18	1,058
Spanish Africa	1,580	459	54	4,343
Togo	7,507	950	11	95
Tunisia	1,680	12,357	2	18
Zaire, Republic of	100,546	9,567	18	50
Total, Commonwealth and preferential countries	64,625	185,333	3,070	6,529
Total, other countries	165,171	201,133	174,208	227,945
Total, other Africa		386,466	60,303	83,310
		186,170	234,511	311,255
				446,078

18.30 Values of total exports and imports, by geographic region and country, 1972-74 (thousand dollars) (continued)

Region and country	Total exports		Imports	
	1972	1973	1974	1975
OTHER ASIA				
Bangladesh	—	54,326	60,476	4,880
Hong Kong	22,007	29,087	41,292	109,939
India	102,547	156,737	122,225 (17)	38,466
Malaysia	16,870	29,985	30,414	59,302
Pakistan	41,566	43,306	71,787 (23)	61,330
Singapore	9,691	17,005	31,107	9,662
Sri Lanka, Republic of	6,734	4,485	3,572	15,674
Afghanistan	260	336	1,789	51,482
Burma	1,720	1,900	1,159	7,581
Cambodia and Laos	4	1,536	1,139	18,343
China, People's Republic of	263,639	287,986	435,178 (6)	26
Indonesia	13,502	17,974	23,933	13
Japan	964,795	1,810,748	2,233,604 (2)	17
Korea, North	6,650	11,348	71,632 (24)	8
Korea, South	33,289	65,583	51,320	52,904
Philippines	29,994	28,007	34,307	4,702
Portuguese Asia	1	3	42,551	1,071,467
Taiwan	25,829	34,307	25,149	1,071,467
Thailand	11,557	14,992	25,149	1,071,467
Vietnam	3,260	1,748	7,556	1,071,467
Total, Commonwealth and preferential countries	199,415	334,931	360,872	262,683
Total, other countries	1,356,577	2,274,709	2,957,060	1,344,068
Total, other Asia	1,555,992	2,609,640	3,317,932	1,606,751
OCEANIA				
Australia	163,098	215,231	306,688 (11)	240,523
Fiji	842	1,001	1,067	7,764
New Zealand	39,074	50,951	64,742	6,936
British Oceania, n.e.s.	119	258	135	73,119
French Oceania	672	946	1,697	43
United States Oceania	1,330	977	1,420	21
Total, Commonwealth and preferential countries	203,133	267,441	372,632	5,414
Total, other countries	2,002	1,923	3,117	—
Total, Oceania	205,135	269,364	375,749	5,414
SOUTH AMERICA				
Falkland Islands	2	2	16	—
Guyana	6,169	8,164	10,728	14,390
Argentina	67,830	37,221	66,182 (25)	14,459
Bolivia	1,684	5,341	6,332	18,067
Brazil	87,888	113,955	395,596 (7)	4,816
Chile	10,820	26,925	32,451	87,074
Colombia	28,739	34,348	42,501	111,791 (20)
Ecuador	5,329	6,740	11,599	54,625
French Guiana	226	189	128	32,639
Paraguay	—	401	523	39,100
				15,498
				39,067
				27
				1,475

18.30 Values of total exports and imports, by geographic region and country, 1972-74 (thousand dollars) (concluded)

Region and country	Total exports		Imports	
	1972	1973	1974	1975
Peru	60,459	52,131	65,523	18,893
Surinam	1,945	1,850	2,321	13,411
Uruguay	3,078	4,030	4,587	8,697
Venezuela	154,922	130,998	205,451 (13)	816
Total, Commonwealth and prefer- ential countries	6,171	8,166	10,744	1,289,414 (3)
Total, other countries	422,978	414,138	833,193	14,193
Total, South America	429,149	422,304	843,938	1,581,309
CENTRAL AMERICA AND ANTILLES				1,595,502
Bahamas	13,681	14,683	16,919	10,903
Barbados	11,547	15,940	13,329	3,158
Bermuda	13,394	11,957	13,702	4,634
British Honduras	1,738	1,621	2,105	601
Jamaica	41,099	43,207	46,360	4,215
Leeward and Windward Islands	11,494	10,980	12,806	1,835
Trinidad and Tobago	23,205	28,052	26,490	24,579
Costa Rica	7,064	7,049	14,925	22,357
Cuba	58,943	82,048	145,911 (16)	12,779
Dominican Republic	14,747	15,598	31,388	16,611
El Salvador	3,976	5,616	8,887	8,056
French West Indies	4,488	7,853	829	4,931
Guatemala	4,743	7,001	9,388	536
Haiti	5,067	10,135	11,380	88
Honduras	3,019	4,738	8,590	6,908
Mexico	100,066	120,478	192,004 (14)	2,743
Netherlands Antilles	2,876	3,167	3,722	16,520
Nicaragua	7,443	3,943	5,500	19,417
Panama	7,803	12,701	17,983	83,282
Puerto Rico	52,788	53,617	53,420	47,176
US Virgin Islands	1,466	2,766	3,742	3,413
Total, Commonwealth and prefer- ential countries	116,158	126,440	131,710	6,625
Total, other countries	265,369	330,716	507,668	3,743
Total, Central America and Antilles	381,527	457,156	639,378	14,530
NORTH AMERICA				1,278
Greenland	6,501	6,149	3,364	56,971
St. Pierre and Miquelon	6,668	8,357	11,258	60,646
United States	13,963,363	17,070,031	21,262,702 (1)	223,006
Total, North America	13,976,532	17,084,537	21,277,325	279,977
Total, Commonwealth and prefer- ential countries	2,030,305	2,476,752	3,005,243	940
Total, other countries and EEC	18,109,630	22,824,243	29,046,877	14
Total, all countries	20,139,935	25,300,995	32,052,120	1,723,729
				21,335,143
				23,302,574
				2,389,870
				29,137,507
				31,527,377

In this table a dash indicates that either there was no trade or the amount was less than \$500.
Figures in parentheses indicate rank in 1974.

18.31 Domestic exports from Canada to all countries, to the United States and to the United Kingdom, by section and commodity, 1973 and 1974 (thousand dollars)

Section and commodity	All countries		United States		United Kingdom	
	1973	1974	1973	1974	1973	1974
LIVE ANIMALS	144,688	89,299	117,827	72,303	1,433	647
FOOD, FEED, BEVERAGES AND TOBACCO	3,007,857	3,734,837	861,562	803,519	332,575	388,707
Meat, fresh, chilled or frozen	183,921	133,257	97,005	60,605	8,873	5,078
Other meat and meat preparations	19,329	17,033	11,025	9,793	376	201
Fish, whole or dressed, fresh or frozen	102,943	82,586	49,782	45,910	5,267	3,442
Fish, fillets and blocks, fresh or frozen	144,216	111,484	142,210	108,196	9	93
Fish, preserved, except canned	35,367	43,746	17,966	20,813	—	7
Fish, canned	75,843	63,145	9,018	14,027	41,905	22,872
Shellfish	75,598	70,475	62,840	60,539	2,629	2,401
Dairy produce, eggs and honey	102,252	76,493	41,474	24,205	3,719	1,535
Barley	277,759	323,367	26,445	55,914	5,776	8,793
Wheat	1,219,534	2,041,183	237	15,263	137,639	208,225
Other cereals, unmilled	28,292	23,608	5,577	7,300	1,059	1,596
Wheat flour	48,111	52,817	297	2,229	1,394	653
Other cereals, milled	26,130	39,973	7,031	10,400	1,910	3,366
Cereal preparations	33,011	42,172	31,025	39,188	216	339
Fruits and fruit preparations	33,565	30,150	22,966	20,587	4,129	2,708
Vegetables and vegetable preparations	72,286	75,729	17,411	28,208	32,278	24,093
Sugar and sugar preparations	37,636	42,590	18,735	17,336	887	369
Other foods and materials for food	81,227	75,764	18,847	19,000	4,028	4,297
Oil seed cake and meal	26,186	20,789	2,460	2,050	18,530	16,289
Other feeds of vegetable origin	44,412	40,003	29,104	25,289	50	17
Other fodder and feed	43,253	46,929	15,828	14,648	13,123	18,434
Whisky	231,205	193,699	224,511	187,318	1,566	1,223
Other beverages	6,936	12,527	6,286	11,686	57	221
Tobacco	58,846	75,318	3,483	3,015	47,154	62,455
CRUDE MATERIALS, INEDIBLE	5,019,059	7,764,420	2,733,613	5,027,778	311,685	359,340
Raw hides and skins	55,852	41,378	15,133	9,698	1,830	502
Fur skins, undressed	42,757	44,570	14,340	14,858	8,862	9,866
Other crude animal products	19,739	26,531	16,579	20,668	318	446
Seeds for sowing	19,637	24,553	11,322	14,792	3,683	3,180
Flaxseed	112,984	148,631	293	5,063	13,016	14,406
Rapeseed	230,150	199,843	1	25	426	198
Other oil seeds, oil nuts and oil kernels	26,149	31,956	6,208	11,494	4,640	1,003
Other crude vegetable products	26,932	34,340	24,650	28,925	75	132
Pulpwood	12,326	12,690	8,640	9,351	—	—
Pulpwood chips	15,693	14,300	15,693	14,298	—	—
Other crude wood products	19,019	36,300	13,388	21,515	32	106
Textile and related fibres	19,626	25,725	10,392	15,493	1,338	1,890
Iron ores and concentrates	461,996	542,553	304,329	345,134	51,458	55,641
Scrap iron and steel	35,710	31,298	18,153	25,426	18	94
Aluminum ores, concentrates and scrap	22,839	33,566	16,472	27,665	312	242
Copper in ores, concentrates and scrap	554,275	646,950	43,279	57,365	11,072	3,656
Lead in ores, concentrates and scrap	52,196	64,525	3,629	5,967	348	2,825
Nickel in ores, concentrates and scrap	441,950	438,233	99,971	95,816	125,039	136,958
Precious metals in ores, concentrates and scrap	88,564	146,329	28,937	57,343	35,956	56,422
Zinc in ores, concentrates and scrap	198,083	318,854	23,418	58,033	359	9,793
Radioactive ores and concentrates	64,150	51,309	46,794	24,904	17,356	21,627
Other metals in ores, concentrates and scrap	76,863	98,247	14,002	19,172	9,936	7,486
Crude petroleum	1,482,117	3,408,484	1,482,117	3,408,484	—	—
Natural gas	350,745	493,640	350,745	493,640	—	—
Coal and other crude bituminous substances	165,503	319,128	3,680	46,114	389	2,554
Asbestos unmanufactured	279,474	335,923	93,016	113,808	22,163	24,528
Sulphur	45,007	91,016	9,086	20,967	—	1,604
Other crude non-metallic minerals	82,168	79,980	48,517	46,293	2,897	2,709
Other waste and scrap materials	16,554	23,567	10,830	15,468	163	1,470
FABRICATED MATERIALS, INEDIBLE	8,194,083	10,589,578	5,697,755	7,025,424	774,718	969,849
Leather and leather fabricated materials	12,596	10,941	7,582	8,231	2,456	1,009
Lumber, softwood	1,558,424	1,253,604	1,249,833	873,019	98,217	132,481
Lumber, hardwood	39,940	35,598	35,209	26,991	1,328	1,014
Shingles and shakes	80,247	54,322	77,198	52,772	657	217
Other sawmill products	10,196	10,452	9,846	9,992	130	356
Veneer	51,119	43,389	44,455	38,575	459	557
Plywood	75,556	61,396	11,741	8,065	42,939	35,674
Other wood fabricated materials	30,572	34,197	17,427	19,387	11,148	12,429
Wood pulp and similar pulp	1,058,678	1,861,236	617,219	1,060,380	62,642	109,812
Newsprint paper	1,287,112	1,721,768	1,067,833	1,352,758	76,604	107,443
Other paper for printing	52,308	92,743	33,156	68,541	9,884	12,934
Paperboard	68,749	122,567	12,992	13,823	20,648	36,285
Other paper	147,203	178,953	81,638	89,445	24,097	25,622
Yarn, thread, cordage, twine and rope	17,033	21,345	6,098	7,407	1,396	4,683
Cotton broad woven fabrics	23,944	20,204	7,068	5,664	5,032	2,580
Other broad woven fabrics	24,810	31,816	2,582	6,072	5,332	6,451
Other textile fabricated materials	49,409	59,547	28,186	31,479	3,369	3,793
Oils, fats, waxes, extracts and derivatives	49,048	74,871	8,626	12,442	12,685	14,244
Chemical elements	68,991	86,952	18,961	32,452	37,871	42,145
Other inorganic chemicals	106,997	145,731	87,922	112,212	6,929	10,679

18.31 Domestic exports from Canada to all countries, to the United States and to the United Kingdom, by section and commodity, 1973 and 1974 (thousand dollars) (continued)

Section and commodity	All countries		United States		United Kingdom	
	1973	1974	1973	1974	1973	1974
Organic chemicals	68,523	122,282	42,203	81,392	9,201	9,884
Fertilizers and fertilizer materials	282,649	421,147	218,582	340,904	376	181
Synthetic rubber and plastics materials	89,113	101,923	42,337	54,216	15,232	14,348
Plastics, basic shapes and forms	39,941	43,552	17,751	19,423	3,602	4,175
Other chemical products	42,668	56,815	27,315	32,474	2,607	3,119
Petroleum and coal products	311,524	593,416	292,853	475,924	514	16,753
Ferro-alloys	11,962	15,338	4,203	9,184	4,787	4,088
Primary iron and steel	66,066	115,610	41,382	77,687	2,013	2,984
Castings and forgings, steel	97,532	112,521	96,051	109,374	486	1,487
Bars and rods, steel	42,135	65,565	27,330	47,551	2,776	3,532
Plate, sheet and strip, steel	145,013	193,594	90,048	125,100	9,619	5,531
Railway track material	16,940	24,288	7,313	11,651	—	2
Other iron and steel and alloys	99,779	219,919	92,436	187,122	976	1,489
Aluminum, including alloys	373,688	505,856	202,862	272,576	34,467	56,272
Copper and alloys	520,709	644,519	215,764	250,346	148,019	172,439
Lead, including alloys	43,191	39,517	18,705	17,144	18,836	14,739
Nickel and alloys	377,156	434,184	224,423	279,824	43,463	50,606
Precious metals, including alloys	60,052	102,573	54,253	99,392	880	1,082
Zinc, including alloys	203,239	226,309	154,206	183,079	30,170	21,842
Other non-ferrous metals and alloys	24,559	26,659	17,425	18,160	4,715	5,176
Metal fabricated basic products	159,897	217,633	125,956	174,912	6,120	6,090
Abrasive basic products	56,671	65,781	47,938	55,687	2,995	3,201
Other non-metallic mineral basic products	107,702	108,290	83,768	80,413	4,035	4,970
Electricity	109,220	174,596	109,220	174,596	—	—
Other fabricated materials, inedible	31,223	36,061	17,860	17,588	5,008	5,451
END PRODUCTS, INEDIBLE	8,308,116	9,034,788	7,161,256	7,633,590	160,591	159,627
Machinery	843,834	1,147,500	658,030	870,434	16,863	25,812
Engines and turbines, general purpose	44,887	47,005	21,070	24,203	1,664	3,132
Electric generator and motors	16,164	24,598	10,647	15,803	344	1,251
Other general purpose industrial machinery	87,532	123,458	61,129	79,468	3,322	5,472
Materials handling machinery and equipment	95,456	130,012	76,598	92,811	625	2,618
Drilling, excavating, mining machinery	43,174	82,540	21,310	41,973	1,154	1,545
Metalworking machinery	52,824	71,081	41,606	56,661	2,075	3,075
Woodworking machinery and equipment	39,891	58,935	24,568	34,981	1,176	1,549
Construction machinery and equipment	30,773	46,128	16,513	24,973	477	445
Plastics industry machinery and equipment	51,160	57,898	47,161	52,032	1,028	1,275
Pulp and paper industries machinery	18,095	33,691	13,465	25,252	130	332
Other special industry machinery	73,620	75,039	49,988	47,683	3,522	2,678
Soil preparation, seeding, fertilizing machinery	44,345	66,107	42,671	64,036	189	276
Combine reaper-threshers and parts	101,119	132,461	97,088	127,873	671	581
Other haying and harvesting machinery	48,092	56,291	45,228	51,367	63	726
Other agricultural machinery and equipment	47,667	65,678	43,724	60,359	317	511
Tractors	49,035	76,578	45,263	70,960	108	346
Transportation and communication equipment	6,366,129	6,583,592	5,773,508	5,970,221	67,611	49,671
Railway and street railway rolling stock	73,155	39,418	15,441	11,026	15	3
Passenger automobiles and chassis	2,373,247	2,649,050	2,316,395	2,574,915	9	39
Trucks, truck tractors and chassis	755,300	864,028	709,177	800,607	5	—
Other motor vehicles	117,927	114,812	105,279	90,727	210	3,298
Motor vehicle engines and parts	543,901	460,805	539,112	456,444	200	240
Motor vehicle parts and accessories	1,547,663	1,490,030	1,454,709	1,386,400	2,500	3,515
Ships, boats and parts	177,085	106,406	66,855	46,628	25,767	4,849
Aircraft, complete with engines	28,109	55,222	6,688	8,313	34	2,679
Aircraft engines and parts	108,156	124,770	79,964	93,624	7,733	9,056
Aircraft parts, except engines	277,814	253,433	245,188	218,833	5,377	6,639
Other transportation equipment	62,830	72,661	57,258	66,953	228	97
Television and radio sets and phonographs	33,548	34,554	32,028	32,523	389	427
Other telecommunication and related equipment	267,394	318,402	145,414	183,228	25,142	18,829
Other equipment and tools	582,105	657,059	378,926	380,347	44,641	43,774
Heating and refrigeration equipment	31,704	45,247	20,611	27,355	4,616	5,210
Cooking equipment for food	8,896	8,782	2,852	2,394	3,511	3,039
Electric lighting and distribution equipment	87,596	105,378	54,342	49,033	4,575	5,934
Navigation equipment and parts	57,991	57,301	38,349	35,521	922	951
Other measuring, controlling, laboratory, medical and optical equipment	72,034	77,661	41,400	43,640	6,024	3,837
Hand tools and miscellaneous cutlery	22,429	27,559	10,004	11,793	1,449	1,617
Office machines and equipment	205,194	217,012	135,194	117,643	19,501	19,080
Other equipment and tools	96,260	118,118	76,173	92,968	4,042	4,107
Personal and household goods	236,892	259,595	165,366	162,645	15,199	19,070
Apparel and apparel accessories	119,759	127,392	85,049	82,173	5,137	6,919
Footwear	18,359	17,550	16,446	15,052	1,079	1,389
Toys, games, sporting, recreation equipment	49,910	52,161	37,426	36,596	3,144	4,146
Other personal and household goods	48,863	62,492	26,444	28,824	5,838	6,616

18.31 Domestic exports from Canada to all countries, to the United States and to the United Kingdom, by section and commodity, 1973 and 1974 (thousand dollars) (concluded)

Section and commodity	All countries		United States		United Kingdom	
	1973	1974	1973	1974	1973	1974
Miscellaneous end products	279,156	387,042	185,426	249,943	16,278	21,300
Medicinal and pharmaceutical products	38,990	40,501	7,709	11,120	1,849	1,670
Medical, ophthalmic, orthopaedic supplies	8,296	12,753	3,073	5,315	431	914
Printed matter	49,342	64,612	42,739	56,523	1,581	1,658
Photographic goods	35,114	42,084	25,105	31,024	4,418	5,610
Firearms, ammunition and ordnance	27,510	26,568	22,982	22,117	603	810
Containers and closures	32,551	39,060	25,725	29,704	953	1,839
Prefabricated buildings and structures	34,684	59,941	23,408	48,636	530	628
Other end products	52,669	101,523	34,684	45,504	5,913	8,172
SPECIAL TRANSACTIONS — TRADE	45,355	79,585	39,855	66,139	843	176
Total, domestic exports	24,719,157	31,292,507	16,611,868	20,628,753	1,581,845	1,878,346

In this table a dash indicates that either there was no trade or the amount was less than \$500.

18.32 Imports into Canada from all countries, from the United States and from the United Kingdom, by section and commodity, 1973 and 1974 (thousand dollars)

Section and commodity	All countries		United States		United Kingdom	
	1973	1974	1973	1974	1973	1974
LIVE ANIMALS	137,105	109,237	131,007	99,755	1,527	4,455
FOOD, FEED, BEVERAGES AND TOBACCO	1,844,380	2,397,958	861,073	1,137,397	68,164	86,764
Meat, fresh, chilled or frozen	201,739	168,862	75,624	70,723	221	377
Other meat and meat preparations	27,543	26,301	12,045	9,335	613	1,182
Fish and marine animals	110,153	119,053	53,498	57,285	1,787	1,826
Dairy produce, eggs and honey	72,547	86,521	14,561	17,375	773	916
Indian corn, shelled	65,811	149,248	65,809	149,236	—	—
Other cereals and cereal preparations	62,668	95,362	47,305	76,466	7,210	8,767
Bananas and plantains, fresh	37,736	42,080	91	628	—	45
Grapes, fresh	43,760	41,004	40,815	37,814	—	11
Oranges, mandarins and tangerines, fresh	46,301	48,745	31,132	36,482	—	14
Other fresh fruits and berries	85,937	101,336	78,823	91,850	—	7
Fruits, dried or dehydrated	29,632	28,309	12,929	15,920	61	85
Orange juice and concentrates	31,352	36,366	22,564	28,151	1	5
Other fruit juices and concentrates	19,113	18,145	11,119	10,895	485	587
Fruits and products, canned	43,707	47,960	19,361	25,548	1,259	1,381
Other fruits and fruit preparations	21,928	24,430	7,136	8,520	370	168
Nuts, except oil nuts	38,736	44,555	15,568	19,610	158	262
Tomatoes, fresh	33,015	37,281	23,411	28,955	—	2
Other fresh vegetables	117,509	126,762	110,842	120,555	10	18
Other vegetables and vegetable preparations	60,475	97,072	28,633	42,913	2,851	3,325
Raw sugar	161,960	396,000	—	52	—	—
Refined sugar, molasses and syrups	15,822	57,335	5,400	42,337	111	391
Sugar preparations and confectionery	33,916	48,902	11,174	18,205	12,174	16,884
Cocoa and chocolate	38,109	50,491	3,314	11,848	5,543	6,767
Coffee	123,999	131,134	36,387	48,632	761	57
Tea	25,290	30,364	806	1,970	4,849	5,652
Other foods and materials for foods	76,670	104,521	47,857	70,649	2,591	3,903
Oil seed cake and meal	46,915	51,449	46,638	51,444	—	—
Other fodder and feed	24,372	28,574	23,112	27,628	110	143
Distilled alcoholic beverages	59,522	68,720	4,142	4,303	23,066	30,291
Other beverages	71,098	71,701	2,764	3,196	2,314	2,857
Tobacco	17,043	19,375	8,214	8,872	843	841
CRUDE MATERIALS, INEDIBLE	2,016,253	4,066,870	780,215	1,075,195	33,115	29,953
Fur skins, undressed	46,054	58,662	26,123	35,526	4,036	4,470
Other crude animal products	38,187	31,828	31,614	24,447	345	322
Soya beans	50,360	90,505	50,349	90,485	—	—
Other oil seeds, oil nuts and oil kernels	28,374	40,672	26,251	38,318	15	5
Rubber and allied gums, natural	36,651	46,451	2,435	4,821	78	273
Other crude vegetable products	46,175	60,523	35,999	45,704	995	1,771
Crude wood materials	53,292	73,294	52,994	71,518	1	3
Wool and fine animal hair	32,661	28,041	7,076	6,122	17,015	11,300
Cotton	70,735	73,117	63,917	65,462	75	156
Man-made fibres	50,512	56,186	42,310	47,733	2,325	2,711
Other textile fibres	4,302	4,700	1,333	1,470	21	62
Iron ore and concentrates	39,648	36,951	32,121	25,863	—	—
Scrap iron and steel	35,631	56,315	35,611	56,299	3	5
Aluminum ores, concentrates and scrap	93,519	114,754	24,765	21,694	3	2
Other metals in ores, concentrates and scrap	161,636	186,279	77,294	96,433	4,229	5,487
Coal	167,079	302,372	167,079	301,713	—	351
Crude petroleum	940,687	2,642,818	—	—	—	—
Other crude bituminous substances	8,288	6,380	8,249	6,282	—	—
Abrasives, natural	9,827	12,468	9,020	10,448	119	231
Phosphate rock	23,913	40,101	23,704	39,820	—	11
Other crude non-metallic minerals	54,566	66,708	39,356	49,052	2,851	2,131
Other waste and scrap materials	24,156	37,746	22,615	35,983	1,002	662

18.32 Imports into Canada from all countries, from the United States and from the United Kingdom, by section and commodity, 1973 and 1974 (thousand dollars) (continued)

Section and commodity	All countries		United States		United Kingdom	
	1973	1974	1973	1974	1973	1974
FABRICATED MATERIALS, INEDIBLE	4,281,513	6,469,445	2,823,959	4,202,856	252,470	333,161
Leather and leather fabricated materials	47,549	65,041	27,386	43,705	12,472	13,320
Rubber fabricated materials	59,142	73,179	49,795	60,667	1,719	2,409
Lumber	99,353	116,812	90,152	106,749	1	—
Veneer	22,200	21,041	18,640	16,009	225	409
Plywood and wood building boards	79,054	125,820	39,115	80,880	234	56
Other wood fabricated materials	47,676	70,586	36,460	53,395	565	894
Wood pulp and similar pulp	17,266	19,394	13,204	17,418	776	323
Paper and paperboard	138,689	206,744	130,155	191,686	2,228	3,804
Cotton yarn and thread	18,633	23,859	8,295	12,902	3,055	3,031
Man-made fibre yarn and thread	105,779	125,518	54,241	78,562	7,521	7,627
Other yarn and thread	21,288	22,250	11,150	11,676	4,167	3,707
Cordage, twine and rope	20,118	61,344	4,626	10,775	1,067	2,687
Broad woven fabrics, wool and hair	22,789	17,161	714	589	10,980	8,331
Broad woven fabrics, cotton	103,119	132,456	47,364	61,287	1,486	1,916
Broad woven fabrics, man-made	69,386	75,775	18,677	25,854	2,504	2,196
Broad woven fabrics, mixed fibres	88,576	106,555	39,262	56,064	7,011	7,122
Other broad woven fabrics	20,006	26,791	1,342	3,218	673	531
Coated or impregnated fabrics	79,133	95,291	62,085	72,833	3,924	5,040
Other textile fabricated materials	110,122	128,806	55,127	73,845	14,000	8,628
Vegetable oils and fats, except essential oils	41,230	98,062	18,889	54,706	1,610	6,810
Other oils, fats, waxes, extracts, derivatives	42,421	60,821	36,271	52,466	1,590	1,594
Inorganic chemicals	119,416	160,005	86,813	106,089	8,560	12,907
Organic chemicals	210,323	355,907	140,416	239,376	18,563	23,196
Fertilizers and fertilizer materials	18,808	33,511	17,651	31,290	183	235
Synthetic and reclaimed rubber	45,872	60,520	37,251	47,845	2,878	739
Plastics materials, not shaped	195,151	347,307	174,064	276,987	3,339	11,039
Plastic film and sheet	69,883	97,444	57,791	79,080	2,879	3,772
Other plastics basic shapes and forms	58,896	79,005	52,929	71,737	903	1,286
Dyestuffs, except dyeing extracts	41,589	46,162	13,607	15,618	4,581	4,801
Pigments, lakes and toners	24,939	32,154	16,647	19,700	1,603	2,410
Paints and related products	28,676	37,390	26,631	34,355	1,323	2,165
Other chemical products	209,668	287,321	182,345	244,789	7,133	10,716
Fuel oil	131,796	234,484	21,188	34,720	—	—
Lubricating oils and greases	30,239	48,711	26,513	39,387	965	637
Coke of petroleum and coal	27,592	52,870	25,009	40,768	497	5,599
Other petroleum and coal products	24,877	33,629	14,903	28,165	1,543	952
Bars and rods, steel	94,779	247,603	47,727	103,966	5,215	6,904
Plate, sheet and strip, steel	222,574	470,150	120,572	251,654	8,604	14,568
Structural shapes, steel and sheet piling	79,369	183,835	41,876	79,258	13,077	19,899
Pipes and tubes, iron and steel	94,855	149,477	51,873	89,460	4,279	6,950
Wire and wire rope steel	40,219	68,794	8,864	13,997	10,489	12,851
Other iron and steel and alloys	121,018	138,243	84,487	97,182	3,341	5,779
Aluminum, including alloys	127,805	173,921	112,551	152,448	7,304	8,151
Copper and alloys	71,629	96,736	56,996	67,143	3,002	4,331
Nickel and alloys	71,672	92,344	17,129	28,592	4,887	3,434
Precious metals, including alloys	36,788	135,129	24,664	108,395	9,420	23,295
Tin, including alloys	24,177	43,071	5,153	27,314	134	1,713
Other non-ferrous metals and alloys	41,316	58,962	22,274	35,131	870	2,114
Bolts, nuts and screws	83,022	108,149	71,414	87,798	2,101	3,627
Other basic hardware	94,873	121,145	74,927	92,982	4,756	6,544
Chains	21,232	30,608	11,023	15,229	3,161	3,152
Valves	64,234	78,561	41,154	49,669	10,062	12,102
Pipe fittings	46,734	75,657	36,233	45,392	2,670	6,942
Other metal fabricated basic products	105,018	152,133	90,867	130,962	5,155	7,583
Clay bricks, clay tiles and refractories	59,432	90,389	40,527	58,178	3,686	3,535
Sheet and plate glass	31,199	36,368	20,361	22,529	517	1,548
Other glass basic products	46,821	51,892	35,200	41,691	3,736	3,071
Abrasive basic products	28,469	39,328	24,208	32,823	686	1,258
Natural and synthetic gem stones	29,978	35,780	3,662	3,970	1,816	1,349
Other non-metallic mineral basic products	49,086	78,277	38,506	63,886	4,578	4,848
Electricity	6,422	3,868	6,422	3,868	—	—
Other fabricated materials, inedible	97,539	129,298	78,580	104,144	6,166	6,725
END PRODUCTS, INEDIBLE	14,776,578	18,170,906	11,695,214	14,441,786	638,765	659,333
Machinery	2,762,046	3,617,744	2,215,611	2,932,600	185,222	196,777
Engines and turbines, diesel, general purpose	52,990	58,572	37,146	40,216	11,473	11,436
Engines and turbines, general purpose, n.e.s.	72,815	98,482	55,220	74,429	12,295	11,681
Electric generators and motors	114,693	139,650	78,222	99,902	22,659	19,062
Bearings	81,780	107,468	58,104	71,035	5,135	6,086
Other mechanical power transmission equipment	75,161	88,860	65,884	77,256	6,900	6,786
Compressors, blowers and vacuum pumps	59,092	80,758	45,955	63,925	5,499	5,716
Pumps, except oil well pumps	45,983	56,118	37,629	45,140	2,992	4,569
Packaging machinery	48,001	50,387	39,688	42,492	1,777	1,123
Other general purpose industrial machinery	110,832	132,404	90,284	112,529	5,731	7,610

18.32 Imports into Canada from all countries, from the United States and from the United Kingdom, by section and commodity, 1973 and 1974 (thousand dollars) (continued)

Section and commodity	All countries		United States		United Kingdom	
	1973	1974	1973	1974	1973	1974
END PRODUCTS, INEDIBLE						
(continued)						
Conveyors and conveying systems	16,941	23,383	12,539	18,438	1,194	2,026
Elevators and escalators	10,785	14,817	9,378	13,370	388	415
Industrial trucks, tractors, trailers, stackers	78,338	103,354	66,630	88,860	9,177	8,609
Hoisting machinery	64,951	97,836	49,658	79,385	1,756	1,789
Other materials handling equipment	63,747	89,319	59,397	81,807	1,113	900
Drilling machinery and drill bits	96,385	113,453	87,473	103,308	578	1,486
Power shovels	80,814	110,614	62,700	92,787	1,410	1,838
Bulldozing and similar equipment	14,471	18,313	13,069	16,288	252	195
Front end loaders	93,083	120,631	89,259	113,596	955	727
Other excavating machinery	42,203	64,199	39,467	62,437	410	445
Mining, oil and gas machinery	82,983	104,855	66,038	82,756	11,862	11,634
Construction and maintenance machinery	84,436	110,554	75,253	98,064	2,786	2,336
Machine tools, metalworking	118,864	147,395	81,275	98,551	9,430	11,763
Welding apparatus and equipment	25,561	38,526	22,550	34,075	814	1,048
Rolling-mill machinery	25,733	34,263	10,351	22,313	6,409	9,106
Other metalworking machinery	88,785	114,476	67,067	85,888	7,529	10,280
Pulp and paper industries machinery	40,408	62,743	29,801	45,051	2,238	2,012
Printing presses	40,956	47,927	28,789	37,450	3,802	2,533
Other printing machinery and equipment	46,458	55,454	40,197	47,701	2,659	2,663
Spinning, weaving and knitting machinery	47,654	44,928	23,893	20,967	7,200	6,439
Other textile industries machinery	50,877	64,074	33,783	43,446	2,208	2,984
Food, beverages and tobacco industries machinery	51,760	60,402	36,178	41,229	4,179	4,662
Plastics and chemical industry machinery	52,757	62,501	41,559	49,257	1,130	1,390
Other special industry machinery	145,759	200,792	103,671	139,203	5,186	6,341
Soil preparation, seeding and fertilizing machinery	36,901	59,927	33,415	53,452	596	1,123
Combine reaper-threshers	41,421	55,303	40,273	53,704	230	435
Other haying and harvesting machinery	67,123	104,678	64,572	100,871	341	451
Other agricultural machinery and equipment	83,597	134,255	78,494	124,460	1,393	2,162
Wheel tractors, new	184,213	252,904	140,776	202,541	18,457	17,058
Track-laying tractors and used tractors	83,965	114,885	76,506	97,627	114	1,131
Tractor engines and tractor parts	138,775	178,282	123,467	156,794	4,966	6,729
Transportation and communication equipment	7,782,802	9,204,424	6,707,000	7,914,121	168,797	141,113
Railway and street railway rolling stock	52,989	83,695	50,149	75,210	1,890	4,108
Sedans, new	1,566,800	1,809,445	1,286,334	1,483,633	20,186	17,519
Other passenger automobiles and chassis	207,786	203,009	151,428	143,051	11,447	13,979
Trucks, truck tractors and chassis	570,662	826,566	539,488	777,823	845	699
Other motor vehicles	230,209	280,908	167,601	198,173	5,170	2,679
Motor vehicle engines	382,298	396,766	337,863	357,194	19,113	1,299
Motor vehicle engine parts	366,627	332,719	352,123	318,482	3,509	4,044
Motor vehicle parts, except engines	2,738,570	3,132,259	2,659,792	3,016,995	13,899	15,767
Marine engines and parts	69,323	91,344	54,474	68,649	2,808	4,183
Ships, boats and parts, except engines	61,103	105,360	35,490	59,369	8,483	5,878
Aircraft, complete with engines	260,131	337,175	247,538	324,178	2,930	596
Aircraft engines and parts	106,691	124,813	75,656	103,703	29,838	20,641
Aircraft parts, except engines	144,097	166,428	137,440	160,758	2,828	3,043
Other transportation equipment	213,511	358,055	107,087	244,984	12,203	9,561
Telephone and telegraph equipment	71,414	85,932	52,602	65,334	5,043	4,437
Television, radio sets and phonographs	231,949	264,905	100,567	107,264	806	1,105
Electronic tubes and semi-conductors	130,220	143,468	104,821	107,245	3,905	4,084
Other telecommunication and related equipment	378,423	461,576	246,547	302,076	23,896	27,490
Other equipment and tools	1,992,051	2,526,242	1,605,449	2,051,243	86,646	84,180
Air conditioning and refrigeration equipment	136,830	189,653	119,062	163,864	3,656	4,064
Electric lighting fixtures and portable lamps	83,703	88,058	65,525	67,276	1,219	1,211
Switchgear and protective equipment	41,015	52,207	23,677	36,621	8,132	3,132
Industrial control equipment	45,549	45,616	37,761	38,570	3,224	1,730
Other electric lighting distribution equipment	93,736	112,546	68,579	91,834	5,387	5,104
Auxiliary electric equipment for engines	88,512	104,171	79,281	94,802	3,109	2,890
Electrical property measuring instruments	44,864	54,335	35,550	43,989	4,266	5,087
Miscellaneous measuring, controlling instruments	72,420	85,049	64,067	75,417	2,712	2,877
Medical and related equipment	58,377	77,722	49,945	67,593	1,718	2,727
Navigation equipment	15,632	11,983	14,337	10,359	457	261
Other measuring, laboratory equipment, etc.	180,944	206,934	141,144	161,242	6,048	5,893
Safety and sanitation equipment	45,644	57,748	41,968	53,389	1,785	1,860
Service industry equipment	53,337	65,618	48,712	58,795	1,178	1,787
Furniture and fixtures	103,435	158,855	64,950	105,367	3,016	4,527
Hand tools and cutlery	127,763	172,329	92,465	123,212	10,388	11,929
Electronic computers	276,813	331,290	261,986	315,496	4,261	4,703
Other office machines and equipment	220,387	275,351	136,213	159,023	19,814	19,096
Miscellaneous equipment and tools	303,088	436,776	260,228	384,394	6,275	5,303

18.32 Imports into Canada from all countries, from the United States and from the United Kingdom, by section and commodity, 1973 and 1974 (thousand dollars) (concluded)

Section and commodity	All countries		United States		United Kingdom	
	1973	1974	1973	1974	1973	1974
END PRODUCTS, INEDIBLE						
(concluded)						
Personal and household goods	1,020,523	1,281,442	299,749	435,358	103,421	123,393
Outerwear, except knitted	132,109	170,284	31,420	43,939	5,484	6,644
Outerwear, knitted	133,077	151,360	6,109	10,666	9,953	10,884
Other apparel and apparel accessories	89,953	119,552	26,132	48,967	6,692	8,289
Footwear	102,893	136,509	6,028	10,369	7,810	11,201
Watches, clocks, jewellery and silverware	76,621	101,550	18,912	28,831	9,788	12,178
Sporting and recreation equipment	83,306	101,229	40,190	54,015	4,512	5,405
Games, toys and children's vehicles	60,796	78,632	27,665	37,235	4,726	6,885
House furnishings	106,983	130,193	51,545	78,240	14,870	14,303
Kitchen utensils, cutlery and tableware	110,053	132,806	34,077	46,068	26,436	31,585
Other personal and household goods	124,731	159,327	57,672	77,028	13,149	16,018
Miscellaneous end products	1,219,156	1,541,054	867,405	1,108,463	94,679	113,869
Medicinal and pharmaceutical products	109,855	144,961	62,387	81,392	14,923	18,189
Medical, ophthalmic, orthopaedic supplies	102,627	118,026	74,398	86,568	3,432	4,358
Newspapers, magazines and periodicals	81,010	99,226	71,383	88,123	1,352	2,176
Books and pamphlets	154,626	172,367	118,002	131,584	12,977	14,468
Other printed matter	81,246	101,438	69,349	88,339	4,713	4,232
Stationers' and office supplies	60,854	82,057	44,678	59,424	5,511	6,652
Unexposed photographic film and plates	75,221	95,148	36,096	51,856	25,738	27,744
Other photographic goods	207,286	263,456	152,601	193,446	4,557	4,847
Containers and closures	101,621	139,701	90,575	125,688	3,170	3,471
Other end products, inedible	244,811	324,673	147,936	202,044	18,305	27,733
SPECIAL TRANSACTIONS — TRADE	246,747	312,961	192,119	248,849	11,356	14,136
Total, imports	23,302,576	31,527,377	16,483,587	21,205,838	1,005,397	1,127,803

In this table a dash indicates that either there was no trade or the amount was less than \$500.

18.33 Domestic exports by section and stage of fabrication, selected years 1956-74 (million dollars)

Year	Stage of fabrication				
	Crude materials				
	Sect. I Live animals	Sect. II Food, feed, beverages and tobacco	Sect. III Crude materials, inedible	Sect. VI Special transactions — trade	Total
All countries					
1956	13.4	750.4	873.0	0.1	1,636.9
1961	66.9	865.5	1,195.4	4.3	2,131.9
1966	78.0	1,362.8	1,947.6	10.1	3,398.5
1971	67.3	1,377.0	3,263.7	12.0	4,720.0
1973	144.7	2,066.1	5,019.1	7.2	7,237.1
1974	89.3	2,859.0	7,764.4	8.1	10,720.9
United States					
1956	11.0	154.6	556.0	¹	721.6
1961	61.1	130.0	694.9	3.5	889.5
1966	69.0	154.5	1,122.7	8.0	1,354.2
1971	55.9	204.3	1,734.8	11.6	2,006.6
1973	117.8	291.2	2,733.6	7.0	3,149.7
1974	72.3	297.8	5,027.8	7.8	5,405.7
United Kingdom					
1956	¹	232.3	130.6	¹	362.9
1961	0.2	179.7	204.5	0.1	384.5
1966	¹	195.7	231.6	0.3	427.6
1971	0.2	197.6	333.0	¹	530.8
1973	1.4	215.7	311.7	¹	528.9
1974	0.6	299.3	359.3	¹	659.3
	Fabricated materials				
	Sect. II Food, feed, beverages and tobacco	Sect. IV Fabricated materials, inedible	Sect. VI Special transactions — trade		Total
All countries					
1956	152.5	2,441.7	3.7		2,597.9
1961	138.7	2,777.3	0.4		2,916.4
1966	204.2	4,012.1	0.7		4,217.0
1971	238.3	5,796.8	0.1		6,035.2
1973	337.7	8,194.1	0.1		8,531.9
1974	309.4	10,589.6	0.2		10,899.2
United States					
1956	31.8	1,755.7	0.6		1,788.1
1961	33.8	1,760.5	0.1		1,794.4
1966	51.7	2,760.8	0.6		2,813.1
1971	72.3	3,912.1	0.1		3,984.5
1973	119.0	5,697.8	¹		5,816.8
1974	91.2	7,025.4	0.2		7,116.8

18.33 Domestic exports by section and stage of fabrication, selected years 1956-74 (million dollars) (concluded)

Year	Stage of fabrication				
	Fabricated materials (concluded)				
	Sect. II Food, feed, beverages and tobacco	Sect. IV Fabricated materials, inedible	Sect. VI Special transactions — trade	Total	
United Kingdom					
1956	46.9	381.0	1		427.9
1961	39.3	440.1	1		479.4
1966	53.4	547.7	1		601.1
1971	38.4	643.0	1		681.4
1973	56.8	774.7	1		831.5
1974	51.0	969.8	1		1,020.8
	End products				
	Sect. II Food, feed, beverages and tobacco	Sect. V End products, inedible	Sect. VI Special transactions — trade	Total	Total, domestic exports
All countries					
1956	180.5	325.6	4.7	510.8	4,745.6
1961	193.7	505.6	7.2	706.5	5,754.8
1966	321.2	2,119.3	14.5	2,455.0	10,070.5
1971	429.7	6,193.2	18.5	6,641.4	17,396.6
1973	604.1	8,308.1	38.1	8,950.3	24,719.3
1974	566.4	9,034.8	71.3	9,672.5	31,292.5
United States					
1956	125.4	152.0	1.0	278.4	2,788.1
1961	134.3	283.7	5.2	423.2	3,107.1
1966	223.2	1,626.0	11.4	1,860.6	6,027.9
1971	323.8	5,354.8	13.5	5,692.0	11,683.1
1973	451.3	7,161.3	32.8	7,645.4	16,611.9
1974	414.5	7,633.6	58.1	8,106.2	20,628.8
United Kingdom					
1956	13.7	6.6	1	20.3	811.1
1961	19.3	26.1	0.1	45.5	909.4
1966	37.5	56.1	0.3	93.9	1,122.6
1971	42.7	124.6	0.3	167.7	1,379.9
1973	60.1	160.6	0.8	221.5	1,581.9
1974	38.4	159.6	0.2	198.2	1,878.3

1 Less than \$50,000.

18.34 Imports by stage of fabrication and section, selected years 1956-74 (million dollars)

Year	Stage of fabrication				
	Crude materials				
	Sect. I Live animals	Sect. II Food, feed, beverages and tobacco	Sect. III Crude materials, inedible	Sect. VI Special transactions — trade	Total
All countries					
1956	5.4	279.3	825.8	7.5	1,118.0
1961	7.0	327.3	763.5	11.4	1,109.3
1966	12.9	422.1	1,023.2	40.8	1,499.0
1971	39.3	558.0	1,321.7	—	1,919.0
1973	137.1	911.9	2,016.3	—	3,065.2
1974	109.3	1,062.6	4,071.4	—	5,243.3
United States					
1956	4.8	144.1	401.7	7.1	557.8
1961	6.5	187.4	335.9	10.2	540.0
1966	12.2	242.7	506.4	35.8	797.2
1971	35.9	301.3	577.0	—	914.2
1973	131.0	540.2	780.2	—	1,451.4
1974	99.8	707.0	1,077.4	—	1,884.1
United Kingdom					
1956	0.4	2.5	28.8	0.2	31.9
1961	0.1	4.6	28.1	0.5	33.4
1966	0.1	8.2	31.6	1.7	41.7
1971	0.2	5.6	24.3	—	30.2
1973	1.5	6.8	33.1	—	41.5
1974	4.5	7.8	29.6	—	41.9

18.34 Imports by stage of fabrication and section, selected years 1956-74 (million dollars) (concluded)

Year	Stage of fabrication				Total
	Fabricated materials				
	Sect. II Food, feed, beverages and tobacco	Sect. IV Fabricated materials, inedible	Sect. VI Special transactions — trade		
All countries					
1956	114.8	1,528.1	26.7		1,669.6
1961	129.5	1,395.8	31.5		1,556.7
1966	145.0	2,233.1	70.5		2,448.6
1971	207.0	3,140.2	2.5		3,349.7
1973	360.0	4,281.5	3.8		4,645.3
1974	655.9	6,475.8	3.1		7,134.8
United States					
1956	37.1	1,096.3	17.4		1,150.9
1961	45.5	943.1	18.0		1,006.7
1966	64.1	1,481.8	61.0		1,606.8
1971	67.4	1,980.6	0.3		2,048.3
1973	125.4	2,824.0	0.5		2,949.9
1974	170.8	4,205.5	0.5		4,376.9
United Kingdom					
1956	5.3	196.5	4.4		206.1
1961	8.1	160.5	4.5		173.1
1966	5.5	175.2	3.0		183.6
1971	6.3	220.4	0.2		226.9
1973	7.7	252.5	0.2		260.4
1974	9.9	332.7	0.2		342.9
	End products				Total, imports
	Sect. II Food, feed, beverages and tobacco	Sect. V End products, inedible	Sect. VI Special transactions — trade	Total	
All countries					
1956	129.5	2,590.1	39.8	2,759.4	5,547.0
1961	164.8	2,879.6	58.2	3,102.6	5,768.6
1966	224.7	5,483.4	210.7	5,918.8	9,866.4
1971	352.6	9,832.2	164.6	10,349.4	15,618.1
1973	572.5	14,776.6	243.0	15,592.0	23,302.5
1974	685.9	18,228.3	286.2	19,200.5	31,578.5
United States					
1956	70.2	2,214.9	37.6	2,322.8	4,031.4
1961	87.2	2,178.2	52.0	2,317.3	3,864.0
1966	95.3	4,451.6	184.7	4,731.6	7,135.6
1971	135.8	7,732.8	119.5	7,988.1	10,950.6
1973	195.5	11,695.2	191.6	12,082.3	16,483.6
1974	261.1	14,496.3	231.4	14,988.7	21,249.7
United Kingdom					
1956	17.9	219.4	1.1	238.4	476.4
1961	21.0	388.2	2.5	411.7	618.2
1966	30.5	380.1	8.8	419.4	644.7
1971	43.9	525.9	10.4	580.2	837.3
1973	53.6	638.8	11.2	703.6	1,005.4
1974	68.8	660.1	12.9	741.8	1,126.6

18.35 Percentage growth rates of domestic exports and imports in current dollars

Item and period	All countries				United States total
	Crude materials	Fabricated materials	End products	Total	
Domestic exports					
1956-61	5.3	2.4	6.7	4.0	2.3
1961-66	9.8	7.7	23.5	11.9	14.1
1966-71	6.6	7.4	21.9	11.6	14.0
1971-74	31.8	21.9	13.5	21.4	21.9
1956-74	11.0	8.3	17.8	11.0	11.8
Imports					
1956-61	-0.2	-1.4	2.4	0.8	-0.9
1961-66	6.2	9.5	13.8	11.7	13.2
1966-71	5.0	6.5	11.8	9.2	8.7
1971-74	39.8	28.6	22.9	26.3	24.6
1956-74	9.0	8.4	11.4	10.1	9.7

Sources

18.1 - 18.23 Merchandising and Services Division, Industry Statistics Branch, Statistics Canada.

18.24 - 18.25 Marketing and Trade Division, Economics Branch, Canada Department of Agriculture.

18.26 - 18.27 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

18.28 - 18.35 External Trade Division, General Statistics Branch, Statistics Canada.

Chapter 19

Banking, finance and insurance

19.1 Banking

19.1.1 The Bank of Canada

Canada's central bank, the Bank of Canada, began operations on March 11, 1935, under the terms of the Bank of Canada Act, 1934, which charged it with the responsibility for regulating "credit and currency in the best interests of the economic life of the nation", and conferred on it specific powers for discharging this responsibility. Through the exercise of these powers, the Bank broadly determines the combined total of the most common forms of Canadian money held by the community — chartered bank deposits and currency. Revisions to the Bank of Canada Act, 1934, were made in 1936, 1938, 1954 and 1967, and are included in RSC 1970, c.B-2.

The provisions of the Bank of Canada Act enable the central bank to determine the total amount of cash reserves available to the chartered banks as a group and in that way to control the rate of expansion of the total assets and deposit liabilities of the banking system as a whole. The Bank Act, which regulates the operation of the chartered banks, requires that each chartered bank maintain a stipulated minimum average amount of cash reserves, calculated as a percentage of its Canadian dollar deposit liabilities, in the form of deposits at the Bank of Canada and holdings of Bank of Canada notes. The minimum cash reserve requirement, which came into effect under the legislation beginning February 1, 1968, is 12% of demand deposits and 4% of other deposits. The ability of the chartered banks as a group to expand their total assets and deposit liabilities is therefore limited by the total amount of cash reserves available. An increase in cash reserves will encourage the banks as a group to expand their total assets (which consist chiefly of loans and marketable securities) with a concomitant increase in their deposit liabilities; a decrease in cash reserves will bring about a decline in their total assets and deposit liabilities as they seek to restore their cash reserve ratios.

The chief method by which the Bank of Canada alters the level of cash reserves of the chartered banks over time, and through them the total of chartered bank deposits, is by purchases and sales of government securities. Payment by the central bank for the securities it purchases in the market adds to the cash reserves of the chartered banks as a group and puts them in a position to expand their assets and deposit liabilities. Conversely, payment to the central bank for securities it sells causes a reduction in the cash reserves of the chartered banks and requires them to reduce their holdings of assets and deposit liabilities.

The influence the Bank of Canada exerts on credit conditions (i.e. on interest cost and other terms of borrowing in financial markets) stems from its ability to limit the growth of bank credit and of the community's holdings of bank deposits and currency. The growth rate of the banking system is one of the factors exerting an important influence on the level of interest rates and other terms of access to credit prevailing in financial markets generally. Current credit conditions (and expectations about future trends in such conditions) in turn have an influence on business and household decisions to spend or to save. Many other factors have an important effect on spending decisions and the behaviour of the economy is subject to such influences as economic and financial developments abroad; the investment, price and wage policies of business firms in Canada; and the character of public policies at all levels of government with regard to expenditure and taxation. In using the powers at its disposal, the Bank attempts to bring about credit conditions appropriate to both domestic and external conditions. Its operations must be based, not on any simple mechanical formula, but rather on continuous observation and appraisal of the constantly changing prospects for the economy as reflected in the complex pattern of economic and financial developments.

In a technical sense, the powers that the central bank possesses allow it to exert a strong influence over economic activity but, in practice, the range through which credit conditions can be permitted to vary is necessarily limited. Changes in credit conditions in Canada affect the position of some groups in the economy much more than that of others, and this uneven impact is bound to inhibit the central bank's operations. Furthermore, interest rates in Canada cannot change greatly in relation to those abroad without producing large capital movements

which might complicate Canada's international payments position. These considerations suggest that monetary policy must be used in appropriate combination with other public economic policies in order to help achieve national economic goals.

Although the Bank of Canada has the power to determine the rate of growth of the combined total of currency and chartered bank deposits, it has no means of determining how much of this total is held in the form of currency and how much in the form of chartered bank deposits. This depends entirely on the preferences of the public, since bank deposits can be converted freely into notes and coin and back again.

Although the cash reserve system in Canada — which is similar to that in a number of other countries — enables the central bank to determine within broad limits the total amount of chartered bank assets and deposit liabilities, the Bank of Canada leaves the allocation of bank and other forms of credit to the private sector of the economy. Each chartered bank is free to attempt to gain as large a share as possible of the total cash reserves available by competing for deposits and to decide what proportion of its funds to invest in particular kinds of securities and in loans to particular types of borrowers. The influence of the central bank — based in essence on its power to expand or contract chartered bank cash reserves through its market purchases or sales of securities — is both indirect and impersonal and is brought to bear on financial conditions generally through the chartered banks and the numerous interconnected channels of the capital market.

The Bank may buy or sell securities issued or guaranteed by Canada or any province, short-term securities issued by Britain, treasury bills or other obligations of the United States and certain types of short-term commercial paper. The Industrial Development Bank Act authorizes the Bank to purchase securities issued by that institution. The Bank may buy or sell gold, silver, nickel and bronze coin, or any other coin, and gold and silver bullion as well as foreign exchange and may accept non-interest-bearing deposits from the Government of Canada, the government of any province, any chartered bank and any bank regulated by the Quebec Savings Bank Act. The Bank may open accounts in other central banks; accept deposits from other central banks, the International Monetary Fund, the International Bank for Reconstruction and Development, and any other official international financial organization; and pay interest on such deposits. The Bank does not accept deposits from individuals nor does it compete with the chartered banks in the commercial banking field. It acts as the fiscal agent for the Government of Canada in the payment of interest and principal and generally in respect of the management of the public debt of Canada. The sole right to issue paper money for circulation in Canada is vested in the Bank.

The Bank of Canada may require the chartered banks to maintain, in addition to the legal minimum cash reserve requirement mentioned above, a secondary reserve which the Bank may vary within certain limits. The secondary reserve, which consists of cash reserves in excess of the minimum requirement, treasury bills and day-to-day loans to investment dealers, cannot be more than 6% of total deposits when first introduced nor can it exceed 12%; effective March 1975, the required level was 5.5%. In the event the Bank wishes to introduce or increase the secondary reserve requirement, one month's notice to the chartered banks is required; the amount of any increase in the requirement cannot exceed 1% a month. In the case of a lowering of the secondary reserve requirement, however, the percentage change in any one month is not restricted.

The Bank of Canada may make loans or advances for periods not exceeding six months to chartered banks, or to banks to which the Quebec Savings Bank Act applies, on the pledge of certain classes of securities. Loans or advances may be made under certain conditions and for limited periods to the Government of Canada or of any province. The Bank of Canada is required to make public at all times the minimum rate at which it is prepared to make loans or advances; this rate is known as the bank rate. From November 1, 1956 until June 24, 1962, the bank rate was established weekly at a fixed margin of one quarter of 1% above the latest weekly average tender rate for 91-day treasury bills. Bank rates since June 24, 1962 have been fixed from time to time and are given in Table 19.1. The rate as at March 1, 1975 was 8.25% per annum.

From June 24, 1962 to November 12, 1970 the money-market rate — the rate at which the Bank of Canada is prepared to enter into purchase and resale agreements with money-market dealers — was either one quarter of 1% above the average rate on 91-day treasury bills

at the preceding weekly tender or the bank rate, whichever was lower; since November 12, 1970 the minimum rate is the bank rate less three quarters of 1%.

Assets and liabilities of the Bank of Canada at December 31, 1972-74 are shown in Table 19.2. The Bank is not required to maintain gold or foreign exchange reserves against its liabilities.

Prior to the 1967 amendment of the Bank of Canada Act, there existed some uncertainty about the exact relationship between the central bank and the government. The changes in the Bank of Canada Act in 1967 were designed to clarify this matter. They provide for regular consultation between the Governor of the Bank and the Minister of Finance as well as for a formal procedure whereby, in the event of a disagreement between the government and the Bank which cannot be resolved, the government may, after further consultation has taken place, issue a directive to the Bank as to the monetary policy that it is to follow. Any such directive must be in writing, it must be in specific terms, and it must be applicable for a specified period. It must be published immediately in the *Canada Gazette* and tabled in Parliament. The amendment makes it clear that the government must take the ultimate responsibility for monetary policy and it provides a mechanism for that purpose but the central bank is in no way relieved of its responsibility for monetary policy and its execution.

The Bank is under the management of a Board of Directors composed of a Governor, a Deputy Governor and twelve directors. The Governor and Deputy Governor are appointed for terms of seven years each by the directors, with the approval of the Governor in Council. The directors are appointed by the Minister of Finance, with the approval of the Governor in Council, for terms of three years each. The Deputy Minister of Finance is a member of the Board but does not have the right to vote. There is an Executive Committee of the Board composed of the Governor, the Deputy Governor, two directors and the Deputy Minister of Finance (who is without a vote); this Committee has the same powers as the Board except that its decisions must be submitted to the Board at its next meeting. In addition to the Deputy Governor who is a member of the Board, there may be one or more Deputy Governors appointed by the Board of Directors to perform such duties as are assigned by the Board.

The head office of the Bank is in Ottawa. It has agencies in Halifax, Saint John, Montreal, Ottawa, Toronto, Winnipeg, Regina, Calgary and Vancouver and is represented in St. John's and Charlottetown.

The Industrial Development Bank, a federal Crown corporation and a subsidiary of the Bank of Canada, was established by Act of Parliament in 1944 to provide capital assistance to develop new businesses and to finance the expansion programs of existing small- and medium-sized businesses which are unable to obtain financing elsewhere in Canada under reasonable conditions and terms.

On December 20, 1974, Royal Assent was given to the Federal Business Development Bank Act. The FBDB, which incorporates the Industrial Development Bank, provides financial and advisory management services to small- and medium-sized businesses in Canada. Most of these services are now being provided by the IDB and federal government departments.

The President of the Industrial Development Bank (IDB) is the Governor of the Bank of Canada and the directors are the directors of the Bank of Canada and the Deputy Minister of Industry, Trade and Commerce. The authorized capital of the IDB is \$125 million and it may also raise funds by the issue of bonds and debentures provided that its total direct liabilities and contingent liabilities in the form of guarantees and underwriting agreements do not exceed 10 times the aggregate of its paid-up capital and reserve fund. Assets and liabilities of the IDB are given in Table 19.3.

The purpose of the IDB is to promote the economic welfare of Canada by ensuring the availability of credit to industrial enterprises which may reasonably be expected to prove successful, by supplementing the activities of other lenders and by providing financial assistance to industry with particular emphasis on meeting the needs of small enterprises. The IDB may, among other things, lend money, guarantee loans to other lenders and purchase shares of a corporation with a view to the resale of the shares. The IDB can lend to virtually any industry, trade or other business undertaking of any kind and meet any sort of financial need.

The IDB Act stipulates that the amount invested or to be invested in the industrial enterprise by persons other than the IDB should be such as to afford it reasonable protection. A loan proposal is then assessed on the grounds of its business viability and creditworthiness.

Through its advisory services program, the IDB helps promote good management practices in small businesses. A series of booklets on various aspects of business management are distributed without charge and seminars on business management are conducted by the IDB in smaller communities across Canada.

The IDB has 71 branches across Canada located in the following centres: St. John's, Corner Brook, Sydney, Halifax, Charlottetown, Moncton, Saint John, Sept Îles, Rimouski, Chicoutimi, Quebec, Sherbrooke, Granby, Trois-Rivières, Longueuil, St-Léonard, Montreal (2), St-Laurent, St-Jérôme, Ottawa, Hull, Rouyn-Noranda, Kingston, Oshawa, Toronto (2), Oakville, Barrie, St. Catharines, Hamilton, Kitchener-Waterloo, Owen Sound, Stratford, London, Chatham, Windsor, Woodstock, Timmins, Sudbury, Sault Ste Marie, Thunder Bay, Kenora, Winnipeg, Brandon, Regina, Saskatoon, Lethbridge, Calgary (2), Red Deer, Edmonton (2), Grande Prairie, Yellowknife, Whitehorse, Cranbrook, Kelowna, Kamloops, Chilliwack, Prince George, Terrace, Abbotsford, New Westminster, Burnaby, North Vancouver, Vancouver, Richmond, Campbell River, Nanaimo and Victoria.

19.1.2 Currency

The development by which bank notes became the chief circulating medium in Canada prior to 1935 is described in the *1938 Canada Year Book* pp 900-905. Those features of the development which then became permanent are outlined in the *1941 Canada Year Book* pp 809-810.

When the Bank of Canada commenced operations in 1935 it assumed liability for Dominion notes outstanding. These were replaced in public circulation and partly replaced in cash reserves by the Bank's legal tender notes in denominations of \$1, \$2, \$5, \$10, \$20, \$50 and \$100. Deposits of chartered banks at the Bank of Canada completed the replacement of the old Dominion notes of \$1,000 to \$50,000 denomination that had previously been used as cash reserves. The chartered banks were required under the Bank Act of 1934 to reduce gradually the issue of their own bank notes during the years 1935-45 to an amount not in excess of 25% of their paid-up capital on March 11, 1935. Bank of Canada notes thus replaced chartered bank notes as the issue of the latter was reduced. Further restrictions introduced by the 1944 revision of the Bank Act cancelled the right of chartered banks to issue or re-issue notes after January 1, 1945, and in January 1950 the chartered banks' liability for such of their notes issued for circulation in Canada as then remained outstanding was transferred to the Bank of Canada in return for payment of a like sum to the Bank of Canada.

Bank of Canada note liabilities for the years 1972-74 are given in Table 19.4. Note circulation in public hands as at December 31, 1974 amounted to \$5,212.8 million, compared to \$4,620.2 million in 1973 and \$4,055.7 million in 1972.

Bank of Canada statistics concerning currency and chartered bank deposits are given in Table 19.5.

19.1.3 Coinage

Under the Currency and Exchange Act (RSC 1970, c.C-39), gold coins may be issued in the denomination of \$20 (nine tenths fine or millesimal fineness 900); subsidiary coins in denominations of \$1, 50 cents, 25 cents, 10 cents (five tenths fine or millesimal fineness 500, or pure nickel); pure nickel five-cent coins; and bronze (copper, tin and zinc) one-cent coins. Provision is made for the temporary alteration of composition in the event of a shortage of prescribed metals. A tender of payment of money in coins is a legal tender in the case of gold coins issued under the authority of Section 4 of the Currency and Exchange Act for the payment of any amount; in the case of silver coins for the payment of an amount up to \$10; nickel coins for payment up to \$5; and bronze coins up to 25 cents.

Table 19.6 gives figures for the value of Canadian coins in circulation. Receipts of gold bullion at the Royal Canadian Mint and bullion and coinage issued are given in Table 19.7.

The Ottawa Mint, established as a branch of the Royal Mint under the (Imperial) Coinage Act of 1870, was opened on January 2, 1908. On December 1, 1931, it became the Royal Canadian Mint and operated as a branch of the Department of Finance. The Mint was established as a Crown (agency) corporation in 1969 to allow for a more industrial type of organization and for flexibility in producing coins of Canada and other countries; buying, selling, melting, assaying and refining gold and precious metals; and producing medals, plaques and other devices.

Financial and budgeting arrangements are similar to those of other Crown companies carrying on industrial or commercial operations. Loans are made from the Consolidated Revenue Fund for operating and capital expenses, with the total outstanding at any time limited to \$35 million. Provision is made for loans for temporary purposes and a reserve is established against losses. Operations are conducted with the aim of making a small profit.

On December 16, 1971, a decision was made by the Cabinet to locate a new plant for the production of coin for general circulation in the Winnipeg area of Manitoba. Work on the site was begun in October 1972 and the plant will be officially opened in the spring of 1976.

The Olympic (1976) Act, assented to on July 27, 1973, authorized the issue of silver coins in the denominations of \$5 and \$10 during the years 1973, 1974, 1975 and 1976 to commemorate the 1976 Summer Olympic Games. A tender of payment of money in Olympic coins is a legal tender for payment of an amount not exceeding \$20.

19.1.4 Chartered banks

Canada's commercial banking system consists of 10 privately owned banks. Eight have been in operation for many years, one began operations in July 1968 and another in January 1973. At the end of December 1974, these banks operated 6,878 banking offices in Canada and 278 abroad. Canadian chartered banks accept various types of deposits from the public including accounts payable on demand, both chequing and non-chequing, notice deposits and fixed-term deposits. In addition to holding a portfolio of securities, they make loans under a wide variety of conditions for commercial, industrial, agricultural and consumer purposes. They also deal in foreign exchange, receive and pay out bank notes, provide safekeeping facilities and perform various other services. For the most part, these operations are carried out in Canada by the extensive network of bank branches. The head offices of the banks confine their activities largely to general administration and policy-making functions, the management of the banks' investment portfolio and related matters. A detailed account of the branch banking system in Canada is given in the *1967 Canada Year Book*, pp 1126-1128.

All banks operating in Canada are chartered (i.e. licensed) by Parliament under the terms of the Bank Act. The Act regulates certain internal aspects of bank operations such as the auditing of accounts, the issuing of stock, the setting aside of reserves and similar matters. In addition, the Bank Act regulates the banks' relationship with the public, the government and the Bank of Canada.

The Bank Act has been revised at approximately 10-year intervals; the most recent revision was enacted by Parliament early in 1967 and came into effect on May 1 of that year. Increased competition and flexibility in the Canadian banking system were reflected in various new Bank Act provisions. These imposed certain restrictions on corporate and other relationships between banks and other financial institutions, while removing certain existing restrictions on the banks' operations which had placed them at some competitive disadvantage in recent years compared with their principal financial competitors.

In the past, various forms of intercorporate financial relationships between chartered banks and other financial enterprises had developed in Canada. In some instances these involved investment by banks in the shares of these enterprises, and vice versa; in others the relationship involved interlocking directorships. These practices are severely restricted under the terms of the 1967 Bank Act, which limits bank ownership of any Canadian corporation to 10% of the voting shares and also provides that no more than one fifth of the directors of any company may become directors of a bank. In addition, after a two-year period a director of a trust or mortgage loan company which accepts deposits from the public may not be appointed or elected a director of a bank. In order to ensure that competition is not curtailed by agreements among the banks on interest rates to be paid on deposits or charged for loans, the 1967 Bank Act prohibits the making of such agreements (except with the consent of the Minister of Finance). At the same time the provision that was formerly in the Bank Act limiting to 6% the interest rate which chartered banks could charge on loans was abolished effective January 1, 1968. Under the 1967 Bank Act, the determination of interest rates on loans and deposits is left to market forces.

The 1967 Bank Act also granted the banks new mortgage-lending powers, permitting them to charge current rates of interest on mortgage loans under the National Housing Act, and also, for the first time, to make conventional residential mortgage loans. In the case of

conventional residential mortgages, the amount of an individual mortgage cannot exceed 75% of the appraised value of the property. The maximum amount of a bank's assets to be held in the form of conventional residential mortgages must not be more than 10% of the bank's Canadian dollar deposit liabilities plus debentures. The banks have also been given authority to issue their own debentures with an original term to maturity of at least five years; such securities are not subject to reserve requirements and rank in priority after deposit liabilities. The amount of debentures that any bank may have outstanding is limited by restricting the increase per annum to 10% of the paid-up capital and rest fund and an upper limit of one half of the bank's paid-up capital and rest fund.

The amendments to the Bank Act in 1967 contained a number of revisions respecting the ownership of Canadian chartered banks. No individual or associated shareholders may vote more than 10% of a bank's total shares outstanding and, if more than 25% of a bank's shares are owned by non-residents, the total outstanding liabilities of the bank may not exceed 20 times its authorized capital stock.

The Bank Act also stipulates the minimum statutory cash reserve requirement that the chartered banks must observe. The minimum amount of Bank of Canada notes and deposits each bank must hold as cash reserves was changed in a series of monthly steps from 8% of all Canadian dollar deposits under the old Bank Act to 12% of demand deposits and 4% of other deposits as at February 1968. In addition, the Bank of Canada was given stand-by powers to require the banks to hold a "secondary reserve" which would consist of cash in excess of their statutory requirements, holdings of treasury bills and day-to-day loans to investment dealers. When initially introduced, this secondary reserve cannot exceed 6% of a bank's deposit liabilities. Thereafter it may be increased in monthly steps of 1% to a maximum of 12%. The Bank of Canada may reduce or remove such a secondary reserve at any time. Secondary reserve requirements since March 1968 are as follows: March 1968, 6%; April 1968, 7%; June 1969, 8%; July 1970, 9%; December 1971, 8.5%; January 1972, 8%; December 1974, 7%; January 1975, 6%; March 1975, 5.5%.

Chartered bank financial statistics for recent years are given in Tables 19.8 - 19.12; month-end data are available in the *Bank of Canada Review*.

Branches of chartered banks. Although there are fewer chartered banks now than at the beginning of the century, there has been a great increase in the number of branch banking offices. As a result of amalgamations, the number of banks declined from 34 in 1901 to 10 in 1931, and remained at that figure until the incorporation of a new bank — The Mercantile Bank of Canada — in 1953 brought the total to 11. Since then the amalgamation in 1955 of the Bank of Toronto and the Dominion Bank as the Toronto Dominion Bank, the amalgamation of Barclays Bank (Canada) with the Imperial Bank of Canada in 1956 and the amalgamation of the Canadian Bank of Commerce and the Imperial Bank of Canada as the Canadian Imperial Bank of Commerce on June 1, 1961 reduced this number to eight. The Bank of British Columbia was granted a charter by Parliament in December 1966 and commenced operations in July 1968. The Unity Bank of Canada was granted a charter in November 1972 and commenced operations in 1973, increasing the number of banks to 10. The number of branches of chartered banks in each province at various periods between 1920 and 1974 is given in Table 19.13.

Branches of individual Canadian chartered banks by province as at December 31, 1973 and 1974 and outside Canada as at December 31, 1974 are given in Tables 19.14 and 19.15.

Cheque payments. Historical data on a monthly basis are available from 1924 on the amount of cheques charged to customer accounts in 34 major clearing centres. The value of payments rose steadily throughout the country from 1924 to 1929. From 1929 to 1932 the value declined sharply and thereafter fluctuated within rather narrow limits until the outbreak of World War II. Since 1939, the total value of cheques cashed in these centres has increased steadily (see Table 19.16). The value of cheques cashed in 50 clearing centres during 1973 reached a high of \$1,369,885.5 million, an increase of 28.5% above the value of \$1,065,933.2 million for 1972. All five geographic regions showed increases, with Ontario recording a gain of 33.1%, the Prairie provinces 26.0%, the Atlantic provinces 14.4%, Quebec 21.4% and British Columbia 29.6%. Payments in the two leading centres also reached all-time highs, Toronto advancing 34.9% and Montreal 20.2% over 1972.

19.1.5 Other banking institutions

In addition to the savings departments of the chartered banks and of trust and loan companies, there are provincial government savings banking institutions in Ontario and Alberta, and the Montreal City and District Savings Bank in Quebec, established under federal legislation and reporting monthly to the Department of Finance. Co-operative credit unions also encourage savings and extend small loans to their members.

Province of Ontario Savings Office. The establishment of the Province of Ontario Savings Office was authorized by the Ontario Legislature at the 1921 Session and the first branches were opened in March 1922. Interest at the rate of 8.75% per annum (as at January 1, 1975), compounded half-yearly, is paid on accounts; deposits are repayable on demand. Total deposits as at December 31, 1974 were \$200 million and the number of depositors was approximately 72,400; 21 branches are in operation throughout the province.

Province of Alberta Treasury Branches. Established in 1938 by the Treasury Branches Act, the system operates 82 branches, four sub-branches and 79 agencies throughout the province. As at March 31, 1974, deposits from customers totalled \$503.2 million while advances to individuals, merchants, corporations and municipal bodies totalled \$335.9 million. Profits for the year ended March 31, 1974, before allowances for reserves, were \$5.6 million. Of this amount \$2.5 million was transferred to the general revenue of the province. Financial services include current accounts (non-interest-bearing); regular (chequing) and super (non-chequing) savings, interest-bearing accounts; term deposits for terms ranging from 30 days to six years bearing competitive interest rates; agricultural loans, business loans, life-insured personal loans, mobile home financing, home improvement loans, small businessmen's loans, commercial and industrial mortgage loans, and 15-year residential mortgage loans. The Treasury Branches are also authorized lending agents for Government of Canada — Farm Improvement Loans and Small Business Loans.

The Montreal City and District Savings Bank was founded in 1846 and has operated under a federal charter since 1871. At October 31, 1974, it had a paid-up capital and reserve of \$26.1 million, savings deposits of \$836.8 million and total liabilities of \$873.8 million. Assets of a like amount included \$248.3 million, consisting of federal, provincial, municipal and other securities.

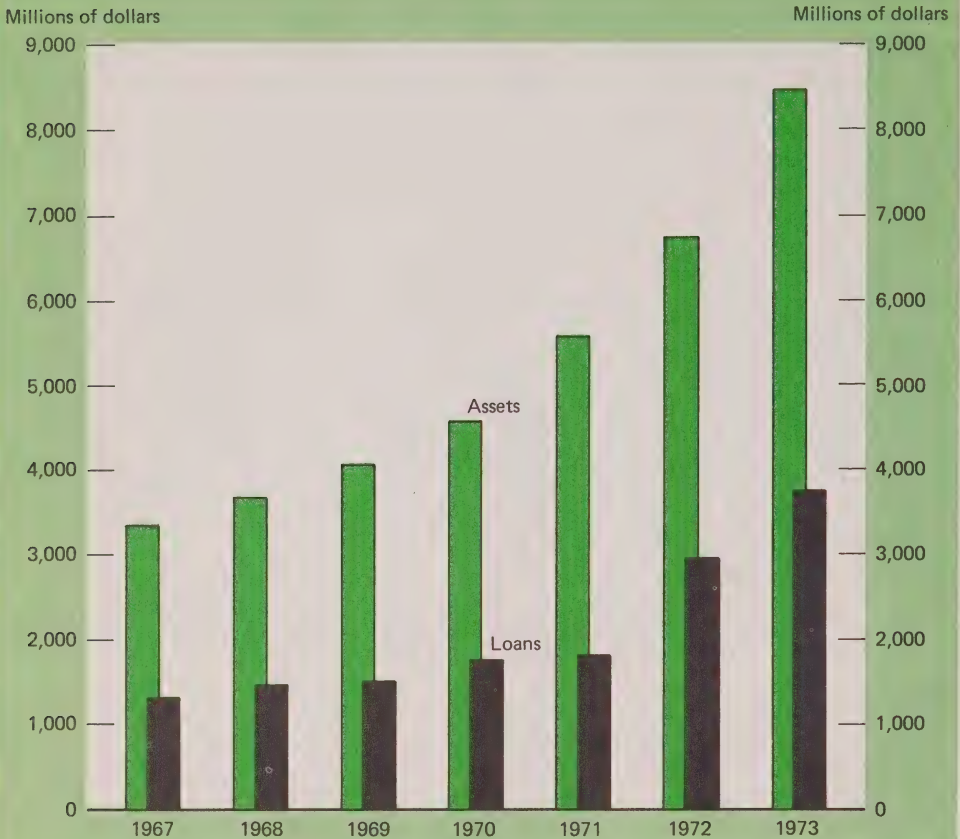
Credit unions. The first credit union in Canada was founded in Lévis, Que., in 1900 to promote thrift by encouraging saving and to provide loans to members who could not get credit elsewhere or could get it only at high interest rates. For many years growth was slow; in 1911, when the first figures were available, assets amounted to \$2 million and by 1940 they were only \$25 million. However, since that time there has been a spectacular increase. The first credit union legislation was passed in Nova Scotia in 1932 followed by legislation in Manitoba and Saskatchewan in 1937 and in Ontario and British Columbia in 1938.

Credit unions are under provincial legislation. Almost all local offices in each province belong to central credit unions operating within the province. There is a difference between Quebec and the other provinces in the asset-holding of credit unions; Quebec credit unions have a larger proportion of their investments in the form of mortgages and government bonds while in most other provinces credit unions have a greater percentage in personal loans. The number of chartered credit unions in Canada at the end of 1973 was 4,256 which reported a total membership of 6.4 million and assets of \$8,466 million (Table 19.17). Quebec, with 3.5 million members and assets of \$4,143 million accounted for 54% and 49%, respectively, of total membership and total assets of all credit unions in Canada (Table 19.18).

Canadian credit unions in the 1960s and 1970s have continued their steady growth. Loans granted by credit unions increased by 26.8% in 1973 to reach \$3,766 million, being a 388% increase over the corresponding figure of \$772 million in 1963. Assets at \$8,466 million increased by 341% and savings at \$7,801 million increased by 352% in the same comparison. Membership of 6.4 million represented 29% of the total population, compared with 3.1 million and 16%, respectively, in 1963. Assets, liabilities and members' equity of local credit unions in Canada are given in Table 19.19.

There were 18 central credit unions in 1973; these are organized as a type of centralized banking entity to serve the needs of their local credit union members, mainly by accepting deposits of surplus funds from them and providing a source of funds for them to borrow when

Credit union assets and loans to members, 1967-73



they cannot meet the demand for local loans. Most of the centrals also admit co-operatives as members. Total assets of the centrals increased by 21% to \$1,611 million over the previous year. The Credit Union National Association serves as the central organization for the provincial centrals.

The centrals had combined total assets of \$1,611 million at the end of 1973 as compared with \$1,324 million a year earlier. Most of the funds are invested in securities and these are financed mainly by demand and term deposits from local credit union members. The combined total assets of local and central credit unions therefore exceeded \$10 billion at the end of 1973.

19.2 Other financial institutions

19.2.1 Trust and mortgage companies

Trust and mortgage companies are registered with either the federal or provincial governments. They operate under the Loan Companies Act (RSC 1970, c.L-12) and the Trust Companies Act (RSC 1970, c.T-16), as amended, or under corresponding provincial legislation.

Trust companies operate as financial intermediaries in two distinct areas: banking and fiduciary. Under the banking functions, trust corporations are permitted to accept funds in exchange for their own credit instruments such as trust deposits, guaranteed investment certificates, etc. This aspect of its business is often referred to as the "guaranteed funds" portion and differs little from the savings business of chartered banks.

Trust corporations are the only corporations in Canada with power to conduct fiduciary business. In this capacity they act as executors, trustees and administrators under wills or by appointment, as trustees under marriage or other settlements, as agents in the management of estates of the living, as guardians of minor or incapable persons, as financial agents for municipalities and companies, as transfer agents and registrars for stock and bond issues, as trustees for bond issues and, where so appointed, as authorized trustees in bankruptcies.

Mortgage corporations may also accept deposits and may issue both short-term and long-term debentures. The investment of these funds is spelled out specifically in the Acts but generally the funds are invested in mortgages secured by real estate.

Trust and mortgage companies were established and grew rapidly under provincial legislation in the late 19th and early 20th centuries. Some companies were chartered by special Acts of Parliament but it was not until 1914 that the federal government began to regulate trust and mortgage companies registered under its Acts. In 1973 there were 17 federal trust companies and 14 federal mortgage companies. The Superintendent of Insurance regulates these companies and also, by arrangement with the provinces, trust and mortgage companies incorporated in Nova Scotia and trust companies incorporated in New Brunswick and Manitoba. Companies must be licensed by each province in which they wish to operate.

Although there may be some differences among the various federal and provincial Acts, the broad lines of the legislation are common. In their intermediary business the companies have the power to borrow or, in the case of trust companies, to accept funds in guaranteed accounts subject to maximum permitted ratios of these funds to shareholders' equity. The funds may be invested in specified assets which include: first mortgages secured by real property; government securities, and the bonds and equity of corporations having established earnings records; loans on the security of such bonds and stocks; and unsecured personal loans. Trust and mortgage companies are not required to hold specified cash reserves, as are the chartered and savings banks, but there are broadly defined "liquid asset" requirements in a number of the Acts.

In the 1920s trust and mortgage companies held about one half of the private mortgage business in Canada but their growth rate fell off sharply because of the effect of the depression and World War II on the mortgage business. In the years since then the strong demand for mortgage financing has led to sustained rapid expansion.

At the end of 1973 total assets of trust companies in the Statistics Canada survey were \$10,509 million compared with \$8,601 million a year earlier, an increase of 22%. Trust companies have been putting a high proportion of their funds into mortgages with the result that 69% of their total assets were represented by mortgages at the end of 1973. The trust companies had \$7,577 million in term deposits outstanding and \$2,048 million in demand deposits at the end of 1973, accounting for 92% of total funds. About 27% of the demand or savings deposits were in chequable accounts. There is considerable variety among the trust companies and a few have developed a substantial short-term business, raising funds by issuing certificates for terms as short as 30 days and also operating as lenders in the money market. Nevertheless, the main business of the trust companies in their intermediary role is to channel savings into mortgages and other long-term investments. In addition, trust companies, as at December 31, 1973 had \$29 billion under administration in estate, trust and agency accounts. Summary statistics are given in Tables 19.20 - 19.22.

Mortgage companies had total assets of \$5,913 million at the end of 1973 compared with \$4,778 million a year earlier. Their holdings of mortgages amounted to \$4,753 million, or 80% of total assets. To finance their investments, these companies sold \$4,032 million of term deposits and debentures and \$646 million of demand deposits.

More complete and up-to-date financial information may be found in quarterly financial statements published by Statistics Canada and the Bank of Canada, the reports of the Superintendent of Insurance on loan and trust companies and the reports of provincial supervisory authorities.

19.2.2 Small loans companies

Small loans companies and money-lenders are subject to the Small Loans Act (RSC 1970, c.S-11). This Act, first passed in 1939, sets maximum charges on personal cash loans not in excess of \$1,500 and is administered by the Department of Insurance. Lenders not licensed under the Act may not charge more than 1% per month. Those wishing to make small loans at higher rates must be licensed each year by the Minister of Finance under the Small Loans Act. The Act allows maximum rates, including charges of every kind, of 2% per month on unpaid balances not exceeding \$300, 1% per month on the portion of unpaid balances exceeding \$300 but not exceeding \$1,000 and one half of 1% on any remainder of the balance exceeding \$1,000. Loans in excess of \$1,500 are not regulated and lenders operating entirely above this limit and the larger loans of licensed lenders are thus exempt from the Act. Nor does the Act regulate charges for the instalment financing of sales. Prior to January 1, 1957, the Act applied only to loans of \$500 or less and the maximum interest charge allowed was 2% per month.

At the end of 1973, there were four small loans companies and 39 money-lenders licensed under the Act. Small loans companies are incorporated federally; money-lenders include provincially incorporated companies. Many of the small loans companies and money-lenders are affiliated with other financial institutions, principally Canadian sales finance companies and United States finance or loan companies. The affiliations with sales finance companies reflect the close relationship between instalment financing and the consumer loan business.

Statistics Canada publishes quarterly balance sheets for sales finance and consumer loan companies as a whole and does not attempt to distinguish the two groups within the industry (see *Financial institutions*, Catalogue No. 61-006).

The subsidiary small loans companies and money-lenders obtain most of their funds through their parent companies. A few of the larger companies have supplemented their bank loans by selling short-term paper in the market but the amount has been small compared with the short-term market borrowing of the sales finance companies. The smaller independent companies rely mainly on their shareholders and on borrowing from the chartered banks.

Annual figures of assets and liabilities given in Table 19.23 for 1972 and 1973 are from the Department of Insurance report. More complete data on the business of licensed lenders are given in the report on small loans companies and money-lenders, published annually by the Superintendent of Insurance.

There was a marked decrease in 1973 compared with 1972 in the number and amount of small loans made by the combined companies. Small loans made to the public during the year numbered 803,674 as against 867,060 in 1972, a drop of about 7%; the amount of such loans decreased from \$539.4 million to \$499.3 million, a drop of about 7%. The average small loan made was \$621 in 1973 and \$622 in 1972. At the end of the year, small loans outstanding numbered 675,464 for an amount of \$340.7 million, or an average of \$504 per loan; comparable figures for 1972 were 758,979, \$383.1 million and \$505, respectively.

Gross profits of small loans companies and money-lenders before income taxes and before taking into account any increase or decrease in reserves for bad debts increased from \$64.7 million in 1972 (\$344,000 being the loss on small loans and \$65.0 million the profit on business other than small loans) to \$65.9 million in 1973 (\$604,000 being the gain on small loans and \$65.3 million the profit on other business).

19.2.3 Foreign exchange

The dollar was established as the official currency of the united provinces of Canada on January 1, 1858, and extended to cover the new Dominion by the Uniform Currency Act of 1870. The gold sovereign remained the standard for the Canadian dollar until 1910 when the currency was defined in terms of fine gold, making it the exact gold equivalent of the United States dollar. Both British and US gold coins, however, were legal tender in Canada during this period.

The 1870 Act defined the Canadian dollar as 15/73 of the British gold sovereign, that is, the par rate of exchange between the dollar and the pound sterling was fixed at \$4.866, making the Canadian currency the equivalent of the US dollar at parity. With minor variations the value of the pound sterling in Canada remained at this level until 1914.

For a complete description of the fluctuations between the Canadian and US dollars up to 1950 see the *1972 Canada Year Book* pp 1252-1254.

On September 30, 1950, the Minister of Finance announced that official fixed foreign exchange rates which had been in effect at varying levels since 1939 would be withdrawn effective October 2, and that the rate would henceforth be determined in the market for foreign exchange. This policy was carried out within the framework of exchange control until December 14, 1951, at which time the Foreign Exchange Control regulations were revoked by the Governor in Council, terminating the period of exchange control that had prevailed in Canada since 1939. The Foreign Exchange Control Act was repealed in 1952. On May 2, 1962, the Minister of Finance announced that the Canadian dollar was being stabilized at a fixed par value of 92½ cents in terms of United States currency. This action was taken with the concurrence of the International Monetary Fund (IMF) and, in accordance with the Articles of Agreement of that organization, the Government of Canada undertook to maintain the Canadian exchange rate within a margin of 1% on either side of the established par value.

On May 31, 1970, the Government of Canada announced a decision not to maintain the exchange rate of the Canadian dollar within the 1% parity band prescribed by the IMF for the time being. The movements of the US dollar in Canadian funds from January 1967 to December 1974 are shown in Table 19.24. Details of Canada's official international reserves and of undelivered contracts in US dollars are presented in Table 19.25.

19.2.4 The bond market

Sales of Canadian bonds. A net total of \$4,799 million was raised in the bond market by Canadian federal and junior governments and corporate borrowers in 1973, an amount substantially lower than that raised in 1972. Provincial governments accounted for about 60% of this total with net new issues of \$2,847 million.

The \$2,847 million worth of net new issues of provincial governments included \$1,038 million purchased by the Canada Pension Plan Investment Fund and about \$229 million through the Quebec Pension Plan. Government of Canada issues outstanding registered a slight decline of \$136 million whereas the net new issues of municipal governments amounted to \$419 million. Corporations resorted to bond financing to the extent of \$1,610 million and other institutions had net new issues in 1973 of \$59 million.

Government of Canada bonds for terms of 10 years and over yielded 7.70% at the end of December 31, 1973 compared to 7.12% a year earlier. Comparable figures for provincials were 8.70% and 7.91%, and for municipals, 8.84% and 8.18%.

There was a large increase of \$893 million in finance and other short-term commercial paper in 1973, whereas the net amount raised through Canadian dollar bankers' acceptances decreased by \$48 million during the year. Yields on 90-day finance company paper at 10.25% at year-end in 1973 were considerably higher than the 5.15% a year earlier.

Bonds outstanding. Total government and business bonds outstanding at the end of 1973 amounted to \$88,632 million, an increase of 5.7% over 1972 and 45% since 1968 (Table 19.26). In the 1968-73 period the largest increase was one of 70% in the bonded debt of provincial governments, including the issues held in the Canada Pension Plan Investment Fund and the Quebec Deposit and Investment Fund. Corporate bonds outstanding increased by 54.7% and municipal government bonds by 23.2%.

Distribution of bond holdings. Table 19.27 shows the estimated distribution as at December 31, 1973 of government and corporate bonds among the major purchasers of securities. Governments and financial institutions specified in the Table held more than one half of the total bonds outstanding; the remainder was shared between non-residents and all other residents with 19% and 27% of the total, respectively. Of the 27%, however, almost one half consisted of Canada Savings Bonds. The largest identified holders of bonds were chartered banks with 11% of the total, trustee pension plans with 8.6%, the Government of Canada with 8%, and the Bank of Canada and life insurance companies with 7.5% and 7.4%, respectively.

19.3 Insurance

Insurance business is transacted in Canada by about 900 companies and societies. All of them are licensed or registered by provincial insurance authorities; at the end of 1973, 429 were also registered by the federal Department of Insurance. Details of the classes of insurance each company or society is authorized to transact and statistical information may be

found in the various published reports of the individual superintendents of insurance for the provinces. Financial statistics of the federally registered companies and fraternal benefit societies are published in the annual three-volume *Report of the Superintendent of Insurance for Canada*.

19.3.1 Life insurance

Total life insurance in force in Canada at the end of 1973 amounted to \$167,240 million of which about 93% was written by federally registered companies and fraternal benefit societies. The remainder was written by companies and societies that were provincially licensed only.

At the end of 1973, 137 companies were registered by the federal Department of Insurance to transact life insurance (53 Canadian, 12 British and 72 foreign). There were also 42 registered fraternal benefit societies (15 Canadian and 27 foreign).

The business of federally registered companies in Canada grew from \$91 million in 1880 to \$153,610 million at the end of 1973. Table 19.28 gives figures since 1880 for amounts of new insurance effected during the indicated year and an analysis of amounts in force at the end of the year among Canadian, British and foreign companies. Canadian companies reported an additional \$43,356 million in force out of Canada at the end of 1973.

During 1973, there were over 734,000 new policies effected with a value of over \$19,000 million. Over 135,000 policies ceased by death or maturity with a value of over \$623 million. Tables 19.29 and 19.30 compare newly effected written business and total amounts in force for 1972 and 1973.

Net insurance premiums written in 1973 totalled \$1,631 million as compared with \$1,510 million in 1972. Net insurance claims (death, disability and maturity) totalled \$656 million in 1973 as compared with \$591 million in 1972. Table 19.31 gives a provincial analysis of the premium income in 1972 on a direct written basis.

Assets of Canadian life insurance companies on a world-wide basis totalled over \$19,000 million at the end of 1973. Assets of British companies applicable to business in Canada, on deposit with the Receiver General, vested in trust or secured by policies in Canada, totalled \$1,609 million. Those of foreign companies on a similar basis totalled \$2,877 million. In addition, there were assets under the control of the Chief Agent in Canada: \$98 million for British companies and \$122 million for foreign companies. The major categories of assets and related liabilities for 1972 and 1973 are given in Table 19.32.

Total income of Canadian companies amounted to \$3,884 million of which \$809 million was applicable to out-of-Canada business. The income of British companies applicable to Canadian business totalled \$345 million; and of foreign companies, \$682 million. The major sources of income and selected expenditures are given in Table 19.33.

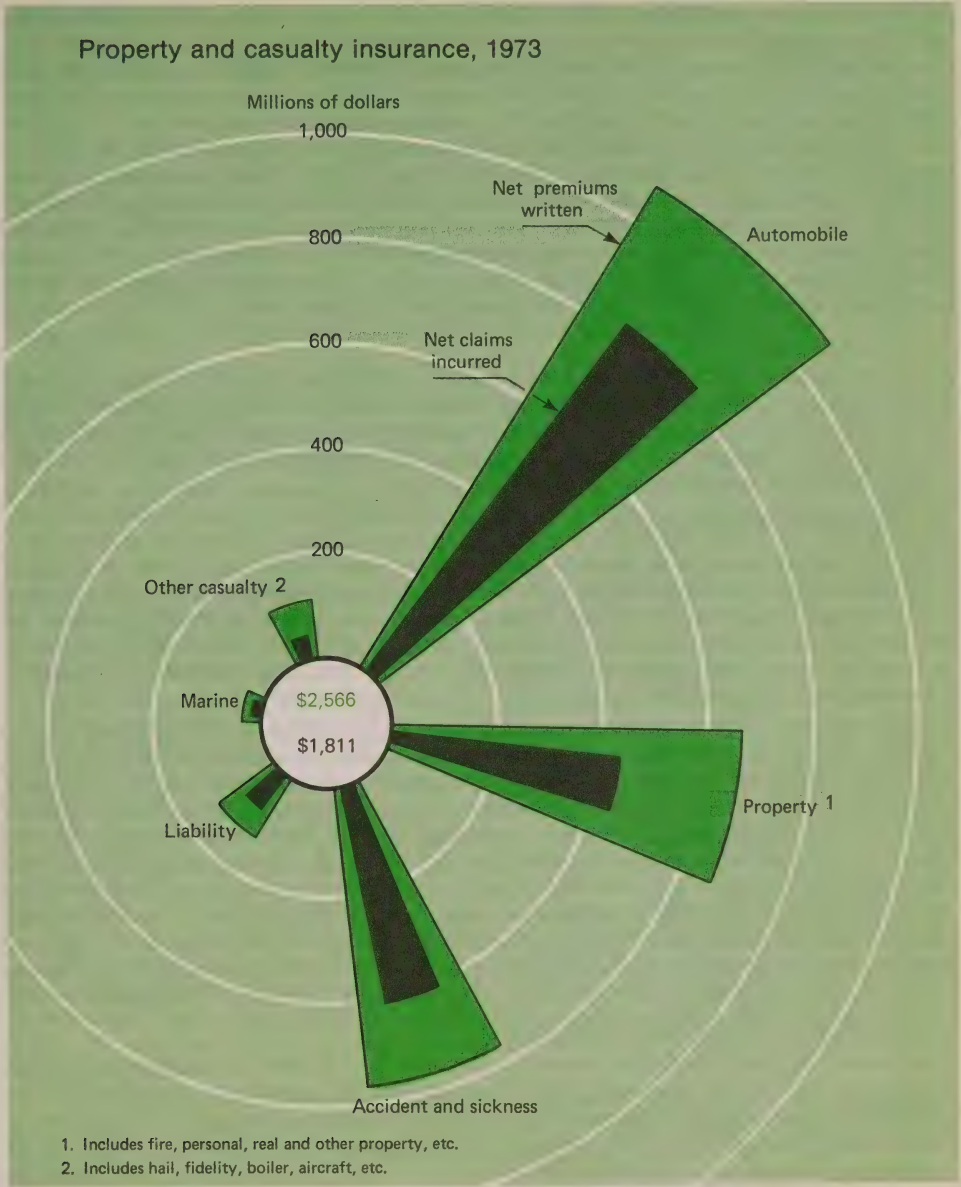
For registered fraternal benefit societies, the certificates in force in Canada totalled \$1,587 million at the end of 1973, as compared to \$1,459 million at the end of 1972. Premiums written in Canada totalled \$28 million during 1973, of which \$23 million was applicable to Canadian societies and \$5 million to foreign societies. Canadian societies also reported \$75 million in premiums written out of Canada.

19.3.2 Property and casualty insurance

Direct premiums written in Canada for property insurance, automobile insurance, personal accident and sickness insurance, liability insurance and other forms of casualty insurance totalled \$3,128 million in 1972 of which about 82% was written by federally registered companies. The remainder was written by other provincially licensed companies including a large number of parish, municipal, county and farmers' mutuals, by Lloyd's and by provincial government insurance offices.

At the end of 1973, there were 359 companies (127 Canadian, 48 British and 184 foreign) registered by the federal Department of Insurance to transact other than life insurance. Of these, 93 were life companies whose non-life business was ordinarily only personal accident and sickness insurance.

For federally registered companies, the premium income on a net basis has increased from just under \$4 million in 1880 to \$2,534 million in 1973. An analysis of premiums and related total claims by class of insurance (including marine) is given in Table 19.34 and by province in Table 19.35.



Assets of Canadian property and casualty companies on a world-wide basis totalled \$2,276 million at the end of 1973. Assets of British companies applicable to their in-Canada business, on deposit with the Receiver General or vested in trust, totalled \$414 million. Those of foreign companies on a similar basis totalled \$1,224 million. In addition, there were assets under the control of the Chief Agent in Canada; \$189 million for British companies and \$307 million for foreign companies. The major categories of the assets and their related liabilities for 1972 and 1973 are given in Table 19.36.

Underwriting experience in Canada over the past 10 years has ranged from a loss of \$54 million in 1964 to a gain of \$51 million in 1967. The loss for 1973 was nearly \$148 million.

Property insurance net premiums written in Canada during 1973 were \$666 million, an increase over 1972 of \$80 million or 14% (Table 19.37). The net premiums earned in 1973

were \$635 million and the net claims incurred were \$437 million indicating a claims ratio of 69%. The claims ratio for 1972 was 62%. Net premiums for automobile insurance written in Canada during 1973 were \$1,081 million, an increase over 1972 of \$100 million or 10%. The net premiums earned in 1973 were \$1,060 million and the net claims incurred were \$831 million, indicating a claims ratio of 78%. The claims ratio for 1972 was 75%.

Personal accident and sickness insurance net premiums written in Canada during 1973 were \$565 million, an increase over 1972 of \$87 million or 18%. The net premiums earned in 1973 were \$549 million and the net claims incurred were \$414 million indicating a claims ratio of 76%. The claims ratio for 1972 was 79%. Net premiums for liability insurance written in Canada during 1973 were \$125 million, an increase over 1972 of \$14 million or 13%. The net premiums earned in 1973 were \$119 million and net claims incurred were \$76 million indicating a claims ratio of 64%. The claims ratio for 1972 was 57%.

19.3.3 Fire losses

Fire losses in Canada reached \$338.2 million in 1973, an increase of \$84.0 million or 33.0% over losses reported in 1972. The total number of fires was 74,479, a decrease of 4,416 or 5.5% from 1972 (Tables 19.38 - 19.39). This represents an average daily loss of \$926,628 from 204 fires. There were 725 deaths from fire in 1973, a decrease of 105 or 12.3%. Of this total, 179 or 25% were children.

19.3.4 Government insurance

19.3.4.1 Federal government insurance

In recent years, various insurance schemes have been adopted by the federal government or undertaken co-operatively by the federal and provincial governments. Information on unemployment insurance, hospital insurance, veterans insurance, export credit insurance, etc., will be found in the appropriate chapters on Labour, Health, Incomes and social security, Merchandising and trade, etc.

Deposit insurance. The Canada Deposit Insurance Corporation was established in 1967 to provide, for the benefit of persons having deposits with a member of the Corporation, insurance against the loss of deposits up to a maximum of \$20,000 for any one depositor. Membership in the Deposit Insurance Corporation is obligatory for chartered banks, Quebec savings banks and those federally incorporated loan and trust companies that accept deposits from the public. Provincially incorporated loan and trust companies that accept deposits from the public are eligible to apply for membership if they have the consent of the province of incorporation. The definition of deposits, as set out in the general by-law of the Corporation, might be summarized as money received by a member institution that is repayable on demand or notice and money that is repayable on a fixed date not more than five years after the money is received. Deposits not payable in Canada or in Canadian currency are not insured.

19.3.4.2 Provincial government insurance

Manitoba. The Manitoba Public Insurance Corporation is a Crown corporation established under the Automobile Insurance Act. The Act and its regulations provided for the establishment of a universal, compulsory automobile insurance plan and of other plans of automobile insurance within the province. The Corporation was created by order of the Lieutenant Governor in Council on September 29, 1970 and commenced operations on November 1, 1971. On November 18, 1974, legislation came into effect changing the former Automobile Insurance Act to the Manitoba Public Insurance Corporation Act. The new Act reflects a broader scope of insurance activities; as of mid-1975, the Manitoba Public Insurance Corporation began offering a wide range of non-compulsory general insurance coverages in competition with private insurance companies. General insurance offered is for fire damage to commercial and residential establishments; guarantee or surety and performance bonding on contracts and persons; public liability to protect householders and homeowners against injury to persons on their property; theft insurance against burglary, robbery and general theft. Various other forms of general insurance will be phased in gradually.

The universal, compulsory automobile insurance plan, known as Autopac, provides the following basic coverage on Manitoba-licensed motor vehicles: (1) bodily injury (including passenger hazard) and property damage liability to \$50,000; no-fault all-perils coverage with \$200 deductible (private passenger cars) and nil deductible for loss caused by fire, lightning, or

theft of the entire vehicle; if a vehicle is stolen, the owner may be reimbursed for transportation expenses up to \$8 a day for up to 30 days; and (2) no-fault personal injury benefits (paid automatically without limiting the insured's right to seek a larger settlement); death benefits to a maximum of \$10,000; funeral expenses to a maximum of \$500; benefits up to \$6,000 for dismemberment, disfigurement, or impairment; loss-of-income payment of \$75 a week for total disability and \$25 a week for partial disability, beginning one week after disability; for a total disability, payments continue for the period during which the insured remains totally disabled, with no time limit, and for partial disability, payments continue up to 104 weeks. Revenue for the plan comes from two sources — premiums on drivers' licences and premiums on vehicles. Premiums on drivers' licences recognize driver responsibility; a driver is allowed to accumulate five demerit points (based on driving convictions) before being assessed an additional driver-insurance premium. Premiums are based on such factors as year, make, model, use and rating territory, based on the address of the vehicle owner.

Saskatchewan. The Saskatchewan Government Insurance Office, a Crown corporation established by the Saskatchewan Government Insurance Act, 1944, commenced business in May 1945. It provides all types of insurance other than sickness and life. The aim of the legislation is to provide residents of the province with low-cost insurance designed for their particular needs. Rates are based on loss experience in Saskatchewan only and the surplus is invested, to the extent possible, within the province. Premium income for 1974 amounted to \$30.9 million and earned deficit amounted to almost \$2.2 million. The total amount made available to the Saskatchewan Government Finance Office from 1945 to December 31, 1974 was \$8 million. Assets at the latter date were \$74.3 million of which \$38 million was invested in bonds and debentures issued by the province and by Saskatchewan municipalities, hospitals and schools. Independent insurance agents, numbering 536, sell insurance throughout the province on behalf of the Office.

The Automobile Accident Insurance Act, administered by the Saskatchewan Government Insurance Office on behalf of the provincial government, provides a comprehensive automobile accident insurance plan. Premiums paid by motorists create a fund from which benefits are paid in the event of death, injury or damages sustained in automobile accidents. Any surplus over payments is used to increase benefits, reduce premiums or absorb deficits in periods of high accident frequency. The surplus is not transferable to the general operation of the Saskatchewan Government Insurance Office, nor is any surplus credited to the provincial government. The plan provides protection against loss arising out of a motorist's liability to pay for bodily injury or death of others and damage to property of others, up to a limit of \$35,000, regardless of the number of claims arising from any one accident. Comprehensive coverage, including collision and upset, subject to \$200 deductible for private passenger cars and farm trucks is also provided. Rates vary from \$6 to \$135 for private passenger cars and \$5 to \$70 for farm trucks. There are various rates for other types of motor vehicles depending on size and usage. From the inception of the Act in 1946 to December 31, 1974, more than \$307 million was paid in claims.

The Saskatchewan Government Insurance Office, under contract with the Saskatchewan Department of Natural Resources, offers insurance to farmers covering damage to crops by certain wildlife such as ducks, geese, sandhill cranes, deer, elk, bear and antelope.

Alberta. A variety of agencies in Alberta offer forms of prepaid protection corresponding to insurance but the nature of the enabling legislation governing these plans emphasizes the fact that they do not constitute insurance. Because such exemptions are specifically provided by the insurance laws of the province, reference to these plans is necessary only to make it clear that they do not come within the scope of the Alberta Insurance Act. It should be noted that the Alberta Hail Insurance Act and the Alberta Crop Insurance Act are administered by the Alberta Hail and Crop Insurance Corporation and each contains a clause exempting its operations from the provisions of the Alberta Insurance Act.

Sources

19.1.1 - 19.1.2 Banking and Financial Analysis Department, Bank of Canada.

19.1.3 Royal Canadian Mint.

- 19.1.4 Banking and Financial Analysis Department, Bank of Canada; The Canadian Bankers' Association; Business Finance Division, Business Statistics Field, Statistics Canada.
- 19.1.5 The Province of Ontario Savings Office; Treasury Branches of Alberta; The Montreal City and District Savings Bank; Business Finance Division, Business Statistics Field, Statistics Canada.
- 19.2.1 Business Finance Division, Business Statistics Field, Statistics Canada.
- 19.2.2 Special Services Division, Department of Insurance.
- 19.2.3 Banking and Financial Analysis Department, Bank of Canada.
- 19.2.4 Financial Flows and Multinational Enterprise Division, System of National Accounts (Current) Branch, Statistics Canada.
- 19.3.1 - 19.3.2 Special Services Division, Department of Insurance.
- 19.3.3 Dominion Fire Commissioner, Department of Public Works.
- 19.3.4 Canada Deposit Insurance Corporation; The Manitoba Public Insurance Corporation; Saskatchewan Government Insurance Office; Department of Consumer Affairs, Government of Alberta.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

19.1 Bank rates from June 24, 1962 to Jan. 13, 1975

Date of change	% per annum	Date of change	% per annum	Date of change	% per annum
June 24, 1962	6.00	Jan. 22, 1968	7.00	Feb. 15, 1971	5.75
Sept. 7, 1962	5.50	Mar. 15, 1968	7.50	Feb. 24, 1971	5.25
Oct. 12, 1962	5.00	July 2, 1968	7.00	Oct. 25, 1971	4.75
Nov. 13, 1962	4.00	July 29, 1968	6.50	Apr. 9, 1973	5.25
May 6, 1963	3.50	Sept. 3, 1968	6.00	May 14, 1973	5.75
Aug. 12, 1963	4.00	Dec. 18, 1968	6.50	June 11, 1973	6.25
Nov. 24, 1964	4.25	Mar. 3, 1969	7.00	Aug. 7, 1973	6.75
Dec. 6, 1965	4.75	June 11, 1969	7.50	Sept. 13, 1973	7.25
Nov. 14, 1966	5.25	July 16, 1969	8.00	Apr. 15, 1974	8.25
Jan. 30, 1967	5.00	May 12, 1970	7.50	May 13, 1974	8.75
Apr. 7, 1967	4.50	June 1, 1970	7.00	July 24, 1974	9.25
Sept. 27, 1967	5.00	Sept. 1, 1970	6.50	Nov. 18, 1974	8.75
Nov. 20, 1967	6.00	Nov. 12, 1970	6.00	Jan. 13, 1975	8.25

19.2 Assets and liabilities of the Bank of Canada, as at Dec. 31, 1972-74 (million dollars)

Item	1972	1973	1974
Assets			
Foreign exchange	54.0	32.5	8.0
Advances to chartered and savings banks	1.9	—	8.0
Bills bought in open market, excluding treasury bills	—	39.2	139.7
Investments			
Treasury bills of Canada	932.1	1,081.1	1,590.3
Other securities issued or guaranteed by Canada maturing within three years	2,053.3	2,282.3	2,528.7
Other securities issued or guaranteed by Canada not maturing within three years	2,421.5	2,612.5	2,859.6
Bonds and debentures issued by Industrial Development Bank	527.1	656.8	892.0
Other securities	416.6	778.6	572.7
Industrial Development Bank capital stock	59.0	64.0	73.0
Bank premises	23.1	29.5	44.7
All other assets	567.7	422.8	467.4
Total, assets	7,056.3	7,999.2	9,184.1
Liabilities			
Capital paid up	5.0	5.0	5.0
Reserve fund	25.0	25.0	25.0
Notes in circulation			
Held by chartered banks	750.5	931.0	1,077.6
All other	4,055.7	4,620.2	5,212.8
Deposits			
Government of Canada	26.6	6.4	16.7
Chartered banks	1,697.9	2,006.5	2,361.3
Other	52.3	54.2	101.3
Foreign currency liabilities	58.0	25.2	1.9
All other liabilities	385.3	325.9	382.5
Total, liabilities	7,056.3	7,999.2	9,184.1

19.3 Assets and liabilities of the Industrial Development Bank, as at Sept. 30, 1973 and 1974

Item	1973	1974
Assets		
Loans outstanding ^{1, 2, 3}	\$'000,000	713.1
Other assets	16.3	16.3
Total, assets	729.4	980.8
Liabilities		
Capital and reserves	92.6	104.3
Debentures outstanding	605.9	837.3
Other liabilities	30.9	39.2
Total, liabilities	729.4	980.8
Loan transactions		
Disbursements ¹	275.1	404.9
Repayments ¹	154.0	151.8
Loans outstanding plus undisbursed authorizations ¹	871.4	1,036.5
Customers on books	No.	19,142
		23,550

¹Includes investments and agreements of sale.

²Net after allowance for doubtful accounts of \$20.5 million in 1973 and \$22.8 million in 1974.

³Property held for sale amounting to \$2.6 million in 1973 has been reclassified to loans and investments for purposes of comparison with the presentation adopted in 1974.

19.4 Bank of Canada note liabilities, as at Dec. 31, 1972-74 (thousand dollars)

Denomination	1972	1973	1974
Bank of Canada notes			
\$1	164,282	178,378	203,032
\$2	118,107	129,432	143,047
\$5	283,856	311,355	331,830
\$10	879,661	968,676	1,057,131
\$20	2,003,766	2,361,845	2,781,724
\$25	46	46	46
\$50	336,195	379,375	398,505
\$100	928,878	1,104,052	1,236,165
\$500	30	25	25
\$1,000	78,528	105,145	126,084
Total	4,793,348	5,538,329	6,277,588
Note issues in process of retirement ¹	12,894	12,889	12,888
Total, Bank of Canada note liabilities	4,806,242	5,551,218	6,290,476
Held by:			
Chartered banks	750,498	931,014	1,077,645
Others	4,055,744	4,620,204	5,212,831

¹Includes, in 1974, chartered banks' notes \$8,136,255, Dominion of Canada notes \$4,635,543, provincial notes \$27,568 and defunct banks' notes \$88,156; these amounts have changed little in recent years.

19.5 Canadian dollar currency and chartered bank deposits, as at Dec. 31, 1967-74 (million dollars)

Year	Currency outside banks			Chartered bank deposits				Total currency and chartered bank deposits ¹		
	Notes	Coin	Total	Personal savings deposits	Government of Canada deposits	Other deposits ¹	Total ¹	Total including government deposits	Held by general public	Excluding personal savings deposits
1967	2,494	335	2,829	11,760	618	9,096	21,473	24,302	23,685	11,925
1968	2,660	399	3,059	13,622	669	10,507	24,798	27,857	27,188	13,566
1969	2,903	434	3,337	15,030	1,308	9,540	25,878	29,214	27,906	12,876
1970	3,106	461	3,568	16,615	1,257	10,972	28,845	32,412	31,155	14,540
1971	3,506	488	3,993	17,783	2,239	14,572	34,594	38,587	36,348	18,565
1972	4,056	518	4,574	19,949	2,407	16,892	39,248	43,822	41,415	21,466
1973	4,620	589	5,209	24,604	2,361	19,220	46,186	51,395	49,034	24,430
1974	5,213	656	5,868	29,789	4,682	21,784	56,255	62,124	57,442	27,652

¹Less total float, i.e. cheques and other items in transit.

19.6 Canadian coin¹ in circulation, as at Dec. 31, 1967-74

Year	Silver \$'000	Nickel \$'000	Tombac ² \$'000	Steel \$'000	Bronze \$'000	Total \$'000	Per capita \$
1967	290,767	29,994	549	3,446	36,557	361,314	17.51
1968	316,837	75,464	549	3,445	39,705	436,000	20.82
1969	316,715	117,199	549	3,444	43,004	480,911	22.62
1970	316,610	137,890	549	3,444	46,092	504,583	23.60
1971	317,033	159,151	549	3,443	49,297	529,473	24.42
1972	317,269	185,141	549	3,442	53,494	559,896	25.65
1973	325,981	243,246	549	3,441	58,259	631,476	28.58
1974	386,350	321,434	549	3,440	65,199	776,972	34.41

¹The figures shown are of net issues of coin.

²Tombac, a copper-zinc alloy, was used to conserve nickel for war purposes; no coins of this metal have been issued since 1944.

19.7 Receipts of gold bullion at the Royal Canadian Mint and bullion and coinage issued, 1967-74

Year	Gold received '000 oz t	Gold bullion issued '000 oz t	Silver coin issued \$'000	Nickel coin issued \$'000	Bronze coin issued \$'000
1967	2,439	2,288	27,322	2,944	3,451
1968	2,237	2,222	26,167	45,472	3,150
1969	2,147	2,089	—	41,741	3,301
1970	2,114	2,150	—	20,702	3,089
1971	2,010	2,009	556	21,277	3,207
1972	1,931	1,895	350	26,006	4,199
1973	1,476	1,483	8,804	58,128	4,768
1974	1,280	1,337	60,382	78,208	6,941

19.8 Statement of chartered bank assets and liabilities, as at Dec. 31, 1972-74 (thousand dollars)

Assets and liabilities	1972	1973	1974
Assets			
Gold coin and bullion	44,148	102,521	241,436
Other coin in Canada	41,533	34,193	53,867
Other coin outside Canada	1,242	1,213	1,305
Notes of and deposits with Bank of Canada	2,448,393	2,937,468	3,438,919
Government and bank notes other than Canadian	69,663	82,723	82,329
Deposits with banks in Canadian currency	269,666	379,834	562,260
Deposits with banks in currencies other than Canadian	9,524,095	14,758,530	14,885,099
Cheques and other items in transit (net)	1,191,326	2,421,955	2,639,562
Government of Canada treasury bills, at amortized value	2,964,432	3,433,442	3,702,842
Other Government of Canada issued or guaranteed securities maturing within three years, at amortized value	2,113,201	1,730,720	2,161,465
Government of Canada issued or guaranteed securities maturing after three years, at amortized value	2,050,781	2,081,334	2,199,996
Canadian provincial government issued or guaranteed securities, at amortized value	501,452	477,140	480,466
Canadian municipal and school corporation issued or guaranteed securities not exceeding market value	489,054	493,021	464,572
Other Canadian securities, not exceeding market value	1,614,074	1,487,645	2,097,336
Securities other than Canadian, not exceeding market value	548,065	496,181	637,089
Mortgages and hypothecs insured under the National Housing Act 1954	2,436,223	2,889,820	3,316,002
Day, call and short loans to investment dealers and brokers in Canadian currency, secured	1,082,111	1,046,542	1,372,160
Day, call and short loans to investment dealers and brokers in currencies other than Canadian, secured	972,527	536,842	525,897
Loans to Canadian provincial governments in Canadian currency	64,608	107,597	61,674
Loans to Canadian municipalities and school corporations in Canadian currency less provision for losses	829,602	1,133,189	1,455,530
Other loans in Canadian currency, less provision for losses	25,640,842	32,551,280	39,443,466
Other loans in currencies other than Canadian, less provision for losses	5,509,923	7,081,863	11,692,477
Bank premises at cost, less amounts written off	552,882	610,489	731,893
Securities of and loans to corporations controlled by the bank	241,360	260,121	379,207
Customers' liability under acceptances, guarantees and letters of credit, as per contra	1,944,765	2,526,756	4,287,685
Other assets	76,194	91,147	100,288
Total, assets	63,222,162	79,753,566	97,014,822
Liabilities			
Deposits by Government of Canada in Canadian currency	2,406,946	2,361,383	4,682,130
Deposits by Canadian provincial governments in Canadian currency	592,160	723,806	621,539
Deposits by banks in Canadian currency	414,329	492,637	924,805
Deposits by banks in currencies other than Canadian	8,410,824	13,322,655	15,196,536
Personal savings deposits payable after notice, in Canada, in Canadian currency	19,948,624	24,604,249	29,789,439
Other deposits payable after notice, in Canadian currency	7,643,511	9,282,512	11,209,857
Other deposits payable on demand, in Canadian currency	9,721,976	11,100,229	11,569,555
Other deposits in currencies other than Canadian	8,607,249	11,254,683	14,116,603
Advances from Bank of Canada, secured	1,900	—	8,000
Acceptances, guarantees and letters of credit	1,944,765	2,526,756	4,287,685
Other liabilities	300,907	403,970	554,294
Accumulated appropriations for losses	727,057	801,784	809,323
Debentures issued and outstanding	498,330	656,972	780,404
Capital paid up	321,354	343,197	354,500
Rest account	1,663,492	1,862,156	2,103,194
Undivided profits at latest financial year-end	18,738	16,575	6,958
Total, liabilities	63,222,162	79,753,566	97,014,822

19.9 Canadian cash reserves, 1967-74 (million dollars)

Year	Cash reserves			Canadian dollar deposit liabilities	Average cash reserve ratio
	Bank of Canada deposits	Bank of Canada notes	Total		
1967	1,110	487	1,597	20,668	7.7
1968	965	525	1,490	23,314	6.4
1969	1,090	560	1,650	25,916	6.4
1970	1,112	587	1,699	27,066	6.3
1971	1,356	610	1,966	31,329	6.3
1972	1,615	686	2,301	36,951	6.2
1973	1,902	768	2,670	42,246	6.3
1974	2,106	888	2,993	49,814	6.0

Bank of Canada deposits are averages of the months in the year shown; the monthly levels are averages of the juridical days in that month. Bank of Canada notes and Canadian dollar deposits are also averages of the months in the year shown; the monthly levels in this case are averages of the four consecutive Wednesdays ending with the second last Wednesday in the previous month. Until June 1967 the required cash reserve ratio was 8% on both demand and notice deposits. For the next eight months the required minimum monthly average on demand deposits was increased by one half of 1% per month and that on notice deposits was decreased by one half of 1%. Since February 1968 the required ratios have been 12% for demand deposits and 4% for notice deposits as prescribed under the Bank Act.

19.10 Classification of chartered bank deposit liabilities payable to the public in Canada in Canadian currency, as at Apr. 30, 1973 and 1974 (number of accounts)

Deposit accounts of the public of:	1973			1974		
	Personal savings deposit accounts	Other deposit accounts of the public	Total deposit accounts of the public	Personal savings deposit accounts	Other deposit accounts of the public	Total deposit accounts of the public
Less than \$100	7,855,475	2,525,610	10,381,085	7,977,307	146,869	10,487,131
\$100 or over but less than \$1,000	5,550,660	2,563,122	8,113,782	6,120,870	180,111	8,900,048
\$1,000 or over but less than \$10,000	3,896,076	976,539	4,872,615	4,805,680	157,447	5,960,081
\$10,000 or over but less than \$100,000	384,688	194,988	579,676	529,195	88,421	772,251
\$100,000 or over	4,750	28,933	33,683	6,148	17,317	36,814
Total deposits	17,691,649	6,289,192	23,980,841	19,439,200	590,165	26,156,325

19.11 Classification of chartered bank loans in Canadian currency, as at Dec. 31, 1973 and 1974 (million dollars)

Class of loan	1973	1974
General loans		
Personal	9,841.0	11,681.8
To individuals, fully secured by marketable bonds and stocks	923.1	821.5
Home improvement loans	40.2	43.0
To individuals, not elsewhere classified	8,877.7	10,817.3
Farmers		
Farm Improvement Loans Act	452.3	457.0
Other farm loans	1,552.3	1,838.4
Industry	6,523.2	7,706.9
Chemical and rubber products	335.4	439.6
Electrical apparatus and supplies	375.8	484.3
Foods, beverages and tobacco	1,010.7	1,203.4
Forest products	720.9	946.4
Furniture	109.3	137.1
Iron and steel products	836.6	975.5
Mining and mine products	881.0	897.5
Petroleum and products	618.3	828.1
Textiles, leather and clothing	553.3	592.1
Transportation equipment	458.1	475.2
Other products	623.8	727.7
Merchandisers	2,729.9	3,363.4
Construction contractors	1,018.4	1,353.8
Public utilities, transportation and communications	1,240.4	1,412.1
Other business	5,623.3	6,732.0
Religious, educational, health and welfare institutions	415.3	456.6
Total, general loans	29,396.2	35,002.0
Other loans		
Provincial governments	107.6	61.7
Municipal governments and school districts	1,133.2	1,455.5
Special	387.9	743.9
Other	392.9	285.2
Loans to finance the purchase of Canada Savings Bonds	322.2	490.2
Grain dealers and exporters	654.5	545.7
Instalment and other financial companies	504.4 ^r	698.7
Total, other loans	3,505.7 ^r	4,280.9
Total, loans in Canadian currency	32,901.9 ^r	39,282.9

19.12 Chartered bank revenues, expenses, shareholders' equity and accumulated appropriations for losses, as at Oct. 31, 1972-74 (million dollars)

Item	1972	1973	1974
For financial year ended Oct. 31			
Revenues			
Income from loans	2,923.5	4,161.4	6,807.6
Income from securities ¹	560.8	590.8	753.0
Other operating income	384.8	449.5	543.5
Total, revenues	3,869.1	5,201.7	8,104.0
Expenses			
Interest on deposits and bank debentures	1,928.5	2,861.1	5,269.8
Salaries, premiums, contributions and other staff benefits	740.1	918.2	1,148.7
Property expenses, including depreciation	217.9	258.5	314.6
Other operating expenses ²	313.0	385.0	496.4
Total, expenses ³	3,199.5	4,422.8	7,229.4
Balance of revenue ³	669.6	778.9	874.6

19.12 Chartered bank revenues, expenses, shareholders' equity and accumulated appropriations for losses, as at Oct. 31, 1972-74 (million dollars) (concluded)

Item	1972	1973	1974
For financial year ended Oct. 31			
Less:			
Loss experience not included in other operating expenses	-8.3	27.5	137.2
Appropriations for losses, net ⁴	34.8	74.7	7.5
Income taxes	311.2	355.0	425.4
Leaving for dividends and shareholders' equity	331.9	321.7	304.4
Dividends	130.0	147.2	166.8
Total additions to shareholders' equity	208.7	274.8	196.4
From above operations	201.9	174.5	137.6
From issue of new shares including premiums	6.8	100.3	58.8
As at end of financial year			
Shareholders' equity			
Undivided profits	18.7	16.6	7.0
Rest account	1,615.6	1,862.1	2,060.0
Capital paid up	312.8	343.2	351.3
Total, shareholders' equity	1,947.1	2,221.9	2,418.3
Accumulated appropriations for losses	727.1	801.8	809.3

¹Excludes realized profits and losses on securities held in investment account which are included in the item "Loss experience not included in other operating expenses".

²Includes provision for losses based on five-year average loss experience and taxes other than income taxes.

³Before provision for income taxes and appropriations for losses other than those included in "Other operating expenses".

⁴General and tax-paid appropriations for losses: net after any transfers out of accumulated appropriations for losses to undivided profits or rest account.

19.13 Branches¹ of chartered banks, by province, as at Dec. 31, 1920-74

Province or territory	1920	1930	1940	1950	1960	1970	1972	1973	1974
Newfoundland	—	—	—	39	71	114	124	127	127
Prince Edward Island	41	28	25	23	27	30	30	31	32
Nova Scotia	169	138	134	144	173	202	209	217	222
New Brunswick	121	102	97	100	113	136	147	154	162
Quebec	1,150	1,183	1,083	1,164	1,427	1,524	1,506	1,513	1,521
Ontario	1,586	1,409	1,208	1,257	1,785	2,307	2,487	2,580	2,670
Manitoba	349	239	162	165	234	310	323	327	336
Saskatchewan	591	447	233	238	296	350	353	356	356
Alberta	424	304	172	246	394	521	563	588	617
British Columbia	242	229	192	294	514	684	736	776	803
Yukon Territory and Northwest Territories	3	4	5	9	17	21	30	32	32
Canada	4,676	4,083	3,311	3,679	5,051	6,199	6,508	6,701	6,878

¹Figures include sub-agencies and sub-branches in Canada receiving deposits for the banks employing them.

19.14 Branches¹ of individual Canadian chartered banks, by province, as at Dec. 31, 1973 and 1974

Bank	Province or territory											
	Nfld.		PEI		NS		NB		Que.		Ont.	
	1973	1974	1973	1974	1973	1974	1973	1974	1973	1974	1973	1974
Bank of Montreal	36	34	3	3	32	33	26	28	216	216	457	478
The Bank of Nova Scotia	52	53	10	10	64	65	48	50	80	83	378	386
The Toronto-Dominion Bank	2	2	1	2	4	4	6	6	91	92	471	480
La Banque Provinciale du Canada	—	—	2	2	—	—	20	21	265	268	30	30
Canadian Imperial Bank of Commerce	17	18	9	9	34	36	26	26	191	195	708	727
The Royal Bank of Canada	20	20	6	6	82	83	28	30	202	206	502	530
Banque Canadienne Nationale	—	—	—	—	—	—	—	—	466	459	18	19
The Mercantile Bank of Canada	—	—	—	—	1	1	—	1	2	2	2	3
Bank of British Columbia	—	—	—	—	—	—	—	—	—	—	—	—
Unity Bank of Canada	—	—	—	—	—	—	—	—	—	—	14	17
Total	127	127	31	32	217	222	154	162	1,513	1,521	2,580	2,670
	Man.		Sask.		Alta.		BC		YT and NWT		Total	
	1973	1974	1973	1974	1973	1974	1973	1974	1973	1974	1973	1974
Bank of Montreal	72	74	63	62	123	128	157	166	6	6	1,191	1,228
The Bank of Nova Scotia	29	29	40	40	86	88	99	102	2	2	888	908
The Toronto-Dominion Bank	47	47	45	45	86	87	98	102	3	3	854	870
La Banque Provinciale du Canada	—	—	—	—	—	—	—	—	—	—	317	321
Canadian Imperial Bank of Commerce	84	84	106	106	169	177	220	222	18	18	1,582	1,618
The Royal Bank of Canada	88	94	102	103	122	131	176	182	3	3	1,331	1,388
Banque Canadienne Nationale	5	6	—	—	—	—	—	—	—	—	489	484
The Mercantile Bank of Canada	1	1	—	—	2	2	1	1	—	—	9	11
Bank of British Columbia	—	—	—	—	—	3	24	25	—	—	24	28
Unity Bank of Canada	1	1	—	—	—	1	1	3	—	—	16	22
Total	327	336	356	356	588	617	776	803	32	32	6,701	6,878

¹Figures include sub-agencies and sub-branches in Canada for receiving deposits.

19.15 Canadian chartered banks¹ outside Canada, as at Dec. 31, 1974

Region and country	Representation	Region and country	Representation
Asia		St. Vincent	2
Hong Kong	7	Tobago	3
India	1	Trinidad	46
Indonesia	3	Virgin Islands	8
Japan	5	Europe	
Lebanon	4	Belgium	2
Malaysia	1	France	6
Philippines	1	Germany, Federal Republic of	9
Singapore	4	Great Britain	30
Australia		Greece	2
Australia	2	Ireland	2
Caribbean		Italy	2
Antigua	3	The Netherlands	4
Bahamas	48	Norway	1
Barbados	26	Switzerland	1
Dominica	1	North America	
Grand Cayman	10	Belize	10
Grenada	6	Dominican Republic	19
Guadeloupe	1	Mexico	3
Haiti	3	Panama	1
Jamaica	96	United States	64
Martinique	1	South America	
Montserrat	1	Argentina	5
Netherlands Antilles	1	Brazil	4
Puerto Rico	10	Colombia	9
St. Kitts	1	Guyana	11
St. Lucia	5	Venezuela	13

¹Chartered banks are represented by branches, agencies, representative offices, and/or branches of subsidiary companies.

19.16 Cheques cashed at 50 clearing centres, 1972 and 1973 (thousand dollars)

Clearing centre	1972	1973	Clearing centre	1972	1973
ATLANTIC PROVINCES	26,859,804	30,733,743	London	13,765,435	16,887,429
Charlottetown	969,533	1,162,971	Niagara Falls	1,221,412	1,522,608
Fredericton	2,279,895	2,809,385	Oshawa	8,694,246	11,518,022
Glace Bay	125,258	141,987	Ottawa	20,365,185	23,108,386
Halifax	10,369,454	11,106,721	Peterborough	1,447,390	1,692,647
Moncton	2,219,530	2,793,537	St. Catharines	2,719,899	3,154,779
Saint John	3,190,423	3,899,035	Sarnia	1,723,631	2,015,778
St. John's	6,701,299	7,582,680	Sault Ste Marie	1,925,422	6,091,621
Sydney	1,004,412	1,237,427	Sudbury	2,337,870	2,475,438
QUEBEC	276,603,783	335,717,900	Thunder Bay	2,442,856	2,807,134
Chicoutimi	1,090,461	1,345,107	Timmins	547,931	622,591
Drummondville	768,785	961,119	Toronto	460,485,009	621,392,070
Granby	907,097	1,119,135	Windsor	8,743,592	11,045,423
Montreal	238,054,245	286,087,255	PRAIRIE PROVINCES	124,969,889	157,459,786
Quebec	30,724,156	39,967,844	Brandon	729,440	794,562
St. Hyacinthe	1,091,106	1,273,914	Calgary	33,402,603	42,347,970
Shawinigan Falls	368,582	401,002	Edmonton	24,487,009	33,030,660
Sherbrooke	2,007,396	2,664,189	Lethbridge	1,532,404	1,909,007
Trois-Rivières	1,171,183	1,366,095	Medicine Hat	585,385	699,634
Valleyfield	420,772	532,240	Moose Jaw	506,195	626,053
ONTARIO	558,772,881	743,978,034	Prince Albert	648,165	704,566
Brantford	1,966,049	2,572,036	Regina	12,647,496	14,759,218
Chatham	3,235,953	3,190,927	Saskatoon	3,360,521	4,221,201
Cornwall	1,177,124	1,236,573	Winnipeg	47,070,671	58,366,915
Guelph	1,627,043	2,079,556	BRITISH COLUMBIA	78,726,888	101,996,033
Hamilton	17,335,918	21,948,165	Vancouver ¹	68,766,823	89,332,460
Kingston	1,818,886	2,169,193	Victoria	9,960,065	12,663,573
Kitchener	5,192,030	6,447,658	Total	1,065,933,245	1,369,885,496

¹Includes New Westminster.

19.17 Credit unions in Canada, 1967-73

Year	Credit unions chartered	Members	Assets \$'000	Loans granted to members \$'000
1967	4,911	4,280,908	3,367,732	1,323,076
1968	4,861	4,632,382	3,699,840	1,482,003
1969	4,769	5,002,722	4,064,065	1,525,655
1970	4,593	5,203,402	4,591,953	1,781,331
1971	4,441	5,623,994	5,587,728	1,828,888
1972	4,351	5,843,820	6,761,224	2,970,397
1973	4,256	6,382,054	8,465,786	3,765,767

19.18 Summary statistics of credit unions, by province, 1973

Province or territory	Credit unions chartered	Members	Assets \$'000	Shares \$'000	Deposits \$'000	Loans granted to members \$'000
Newfoundland	51	6,378	4,606	3,108	686	3,587
Prince Edward Island	14	16,044	12,402	4,550	3,796	8,293
Nova Scotia	132	120,523	90,210	48,959	31,014	65,376
New Brunswick	146	130,514	83,744	55,804	17,767	49,249
Quebec	1,651	3,464,139	4,143,263	409,219	3,481,706	1,370,389
Ontario	1,386	1,230,418	1,591,689	731,910	702,081	883,067
Manitoba	194	251,463	402,232	1,249	367,307	188,886
Saskatchewan	254	377,077	823,615	294,001	473,659	358,732
Alberta	227	231,860	321,260	100,859	183,516	194,856
British Columbia	199	553,638	992,634	196,316	693,648	643,332
Northwest Territories	2	—	131	50	45	—
Total	4,256	6,382,054	8,465,786	1,846,025	5,955,225	3,765,767

19.19 Assets, liabilities and members' equity of local credit unions in Canada, 1972 and 1973 (million dollars)

Item	1972	1973	Item	1972	1973
Assets			Fixed assets		
Cash and demand deposits			Land and buildings	127	150
On hand	212	265	Equipment and furniture	33	39
In banks	52	51	Stabilization fund deposits	1	15
In centrals	481	516	Other assets	107	91
Other	87	56	Total, assets	6,761	8,465
Investments			Liabilities		
Term deposits	320	487	Accounts payable		
Government of Canada	38	30	Interest	39	56
Provincial governments	220	219	Dividends	2	18
Municipal governments	512	489	Other	20	30
Shares in centrals	64	80	Loans payable		
Religious institutions	52	16	Centrals	123	177
Hospitals	8	25	Banks	10	14
Other	109	322	Other	5	20
Loans			Deposits		
Cash loans			Ordinary	3,051	3,670
Personal	1,964	2,370	Term	1,577	2,285
Farm	80	97	Other liabilities	35	40
Co-operatives and other enterprises	33	43	Members' equity		
Other	36	31	Share capital	1,595	1,846
Mortgage loans			Reserves	256	265
Dwellings	1,999	2,769	Undivided earnings	48	44
Farm	115	127	Total, liabilities and members' equity	6,761	8,465
Co-operatives and other enterprises	67	141			
Other	44	52			
Allowance for doubtful loans	..	-16			

19.20 Assets, liabilities and shareholders' equity of trust companies (company and guaranteed funds), 1972 and 1973 (million dollars)

Item	1972	1973	Item	1972	1973
Assets			Liabilities		
Demand deposits, incl. cash and foreign currency	134	87	Demand and savings deposits		
Investments			Chequing	530	554
Investments in Canadian securities			Non-chequing	1,450	1,494
Federal	519	426	Term deposits		
Provincial	359	329	Under 1 year	1,072	1,173
Municipal	100	98	1 to 5 years	4,751	6,377
Sales finance and commercial paper	343	256	Over 5 years	26	27
Term deposits with chartered banks	500	665	Bank loans	8	14
Term deposits with trust and mortgage companies	48	52	Short-term loans and notes payable	..	..
Corporation bonds and debentures	423	491	Debts owing parent and affiliated companies	16	22
Collateral loans	246	227	Interest, dividends, taxes and other payables	210	268
Mortgages			Shareholders' equity		
Loans under NHA	1,216	1,468	Capital paid up	212	227
Conventional mortgage loans	4,276	5,778	Investment reserves	40	37
Investments in Canadian preferred and common shares	143	170	Reserve fund	216	227
Investments in foreign securities	27	27	Retained earnings	70	89
Investments in subsidiary and affiliated companies	51	77	Total, liabilities and shareholders' equity	8,601	10,509
Interest, rents and other receivables	99	129			
Real estate and equipment	67	80			
Other assets	50	149			
Total, assets	8,601	10,509			

19.21 Assets, liabilities and shareholders' equity of mortgage companies, 1972 and 1973 (million dollars)

Item	1972	1973	Item	1972	1973
Assets			Liabilities		
Demand deposits, incl. cash and foreign currency	31	29	Demand and savings deposits		
Investments			Chequing	177	179
Investments in Canadian securities			Non-chequing	429	467
Federal	161	109	Term deposits		
Provincial	53	65	Under 1 year	78	153
Municipal	6	5	1 to 5 years	2,109	2,804
Sales finance and commercial paper	25	21	Over 5 years	526	496
Term deposits with chartered banks	51	170	Bank loans	62	128
Term deposits with trust and mortgage companies	3	6	Short-term loans and notes payable	190	260
Corporation bonds and debentures	80	86	Debts owing parent and affiliated companies	169	211
Collateral loans	96	93	Interest, dividends, taxes, and other payables	521	661
Mortgages			Shareholders' equity		
Loans under NHA	530	673	Capital paid up	247	272
Conventional mortgage loans	3,236	4,109	Investment reserves	31	26
Investments in Canadian preferred and common shares	80	96	Reserve fund	163	168
Investments in foreign securities	8	3	Retained earnings	76	88
Investments in subsidiary and affiliated companies	287	291	Total, liabilities and shareholders' equity	4,778	5,913
Interest, rents and other receivables	48	61			
Real estate and equipment	57	56			
Other assets	26	40			
Total, assets	4,778	5,913			

19.22 Revenues and expenses of trust and mortgage companies, 1972 and 1973 (million dollars)

Item	Trust companies		Mortgage companies	
	1972	1973	1972	1973
Revenues				
Interest earned	620	761	347	435
Dividends	8	10	14	16
Fees and commissions	175	226	3	4
Other revenues	14	29	31	32
Total, revenues	817	1,026	395	487
Expenses				
Interest	468	598	247	317
Depreciation	5	6	2	2
Amortization	—	—	—	1
Income taxes	46	54	28	34
Other expenses	239	300	72	81
Total, expenses	758	958	349	435
Net profit	59	68	46	52

19.23 Assets and liabilities of small loans companies and money-lenders, 1972 and 1973 (thousand dollars)

Assets and liabilities	1972	1973
Assets		
Small loans balances	383,109	340,678
Balances, large loans and other contracts	1,116,304	1,221,647
Cash	14,617	16,156
Other	32,037	70,979
Total, assets	1,546,067	1,649,460
Liabilities		
Borrowed money	997,220	1,046,379
Unearned charges on large loans and other contracts	248,947	280,731
Reserves for losses	46,362	51,018
Paid-up capital	66,516	66,383
Surplus paid in by shareholders	21,307	21,301
Earned surplus	127,411	135,292
Other	38,304	48,356
Total, liabilities	1,546,067	1,649,460

19.24 Price of the United States dollar in Canada, by month, 1967-74 (Canadian cents per US dollar)

Month	1967	1968	1969	1970	1971	1972	1973	1974
January	107.95	108.47	107.27	107.28	101.16	100.59	99.91	99.14
February	108.06	108.73	107.44	107.31	100.75	100.46	99.55	97.67
March	108.20	108.49	107.67	107.27	100.63	99.84	99.66	97.20
April	108.24	108.01	107.62	107.28	100.76	99.56	100.06	96.73
May	108.21	107.79	107.70	107.28	100.87	98.87	100.05	96.21
June	108.04	107.68	107.95	103.84	102.12	97.94	99.83	96.64
July	107.78	107.36	108.06	103.20	102.11	98.39	99.94	97.61
August	107.58	107.26	107.81	102.14	101.33	98.22	100.38	97.98
September	107.53	107.30	107.82	101.59	101.29	98.29	100.81	98.63
October	107.33	107.27	107.79	102.14	100.44	98.26	100.09	98.30
November	107.51	107.30	107.58	102.00	100.37	98.72	99.88	98.72
December	108.02	107.31	107.42	101.74	99.92	99.67	99.94	98.81
Annual average	107.87	107.75	107.68	104.40	100.98	99.05	100.01	97.80

Rates published by Bank of Canada. Noon average market rate for business days in period.

19.25 Canada's official international reserves and undelivered contracts, 1967-74 (million US dollars)

End of:	Convertible foreign currencies ¹		Special Drawing Rights ^{2,4}	Gold ⁴	Reserve position in the IMF ⁴	Total ⁴	Undelivered contracts in US dollars ³
	US dollars	Other ³					
1967	1,255.2	13.4	—	1,014.9	433.4	2,716.9	16.7
1968	1,964.9	11.6	—	863.1	206.2	3,045.8	25.2
1969	1,743.6	12.3	—	872.3	478.1	3,106.3	7.5
1970	3,022.1	14.5	182.1	790.7	669.6	4,679.0	-6.4
1971	4,060.6	13.6	371.9	791.8	332.6	5,570.4	-4.0
1972	4,355.0	12.6	505.2	834.1	342.9	6,049.9	-2.5
1973	3,927.2	12.2	563.7	926.9	338.2	5,768.2	—
1974	3,767.7	12.9	574.3	940.7	529.7	5,825.3	-8.3

¹Convertible foreign currency holdings of the Exchange Fund Account, the Receiver General for Canada and the Bank of Canada.

²Valued at official rates in terms of US dollars to 1972 and at market rates beginning 1973.

³Holdings of Special Drawing Rights (SDRs) reflect allocations to Canada of SDRs and transactions involving Canada under the arrangements by the International Monetary Fund providing for the use of SDRs by member countries and by the IMF.

⁴Canada's gold and gold-based assets were revalued from US\$35 to US\$38 per oz t of fine gold in May 1972, and to US\$42.22 in October 1973. Beginning July 1974, these assets are valued on the basis of the month-end value of SDRs in terms of US dollars as determined by the IMF.

⁵Includes all US dollar overnight and forward transactions of the Exchange Fund Account and the Bank of Canada that affect the total of official reserves. A positive figure indicates a net commitment to take delivery of foreign exchange in the future and a negative figure indicates a commitment to deliver foreign exchange in the future.

19.26 Canadian bonds outstanding as at Dec. 31, 1968-73, and annual changes in bonds and in short-term paper outstanding (million dollars)

Item	1968	1969	1970 ^r	1971 ^r	1972 ^r	1973
Bonds outstanding Dec. 31						
Government of Canada	23,556	23,902	25,746	28,277	29,873	29,737
Provincial government	17,615	19,676	21,761	24,145	27,180	30,027
Municipal government	6,416	6,659	6,832	7,061	7,484	7,903
Corporate	13,054	13,927	15,494	17,012	18,584	20,194
Institutional	398	479	602	657	712	771
Total	61,039	64,643	70,435	77,152	83,833	88,632
Changes in bonds outstanding and in short-term paper ¹						
Bonds						
Government of Canada	1,545	346	1,844	2,531	1,596	-136
Treasury bills	370	70	730	205	330	530
Marketable bonds	1,073	-165	461	272	64	-289
Non-marketable bonds	102	441	653	2,054	1,202	-377
Provincial government	1,982	2,061	2,085	2,384	3,035	2,847
Municipal government	288	243	173	229	423	419
Corporate	770	873	1,567	1,518	1,572	1,610
Institutional	60	81	123	55	55	59
Total, bonds	4,645	3,604	5,792	6,717	6,681	4,799
Short-term paper						
Corporate						
Finance and other commercial paper	471	541	118	190	220	893
Canadian dollar bankers' acceptances	-30	58	221	8	-13	-48
Total, short-term paper	441	599	339	198	207	845
Total, bonds and short-term paper	5,086	4,203	6,131	6,915	6,888	5,644

Federal, provincial and municipal bonds include direct and guaranteed issues; institutional bonds exclude bonds payable in Canadian dollars of the International Bank for Reconstruction and Development and certain foreign governments, amounting to \$133 million, \$115 million, \$105 million and \$125 million in the years 1968-71, respectively, and \$144 million in 1972 and 1973.

¹Changes in bonds outstanding do not agree with Bank of Canada figures on net new issues due to takeovers, bankruptcies, etc.

19.27 Estimated distribution of bond holdings, as at Dec. 31, 1973

Holder	Government of Canada bonds \$'000,000	Provincial government bonds \$'000,000	Municipal government bonds \$'000,000	Corporate and other bonds \$'000,000	Total \$'000,000	% of total
Bank of Canada	6,025	—	—	657	6,682	7.5
Chartered banks	7,291	469	482	1,460	9,702	11.0
Government of Canada	607	6,428 ¹	—	29	7,064	8.0
Provincial governments	332	2,478	236	808	3,854	4.3
Municipal governments	77	168	830	40	1,115	1.2
Life insurance companies	464	1,348	601	4,182	6,595	7.4
Other insurance companies	502	916	280	1,107	2,805	3.2
Quebec savings banks	29	80	72	63	244	0.3
Trust and mortgage loan companies	535	373	103	576	1,587	1.8
Trusted pension plans	256	4,132	761	2,432	7,581	8.6
All other resident	12,868 ²	5,280	2,900	3,303	24,351	27.5
Non-resident	751	8,355	1,638	6,308	17,052	19.2
All holders	29,737	30,027	7,903	20,965	88,632	100.0

Federal, provincial and municipal bonds include direct and guaranteed issues; "other" bonds include bonds of religious and other institutions, and a small amount of foreign bonds payable in Canadian dollars; short-term commercial borrowing is excluded.

¹Held by the Canada Pension Plan Investment Fund and in Government of Canada accounts.

²Includes Canada Savings Bonds of \$10,726 million.

19.28 Life insurance effected and in force in Canada by insurance companies under federal registration, 1880-1973 (million dollars)

Year	New insurance effected during year	Amounts in force Dec. 31			Total
		Canadian	British	Foreign	
1880	14	38	20	34	91
1900	68	267	39	124	431
1920	630	1,664	77	916	2,657
1940	590	4,609	146	2,221	6,975
1960	5,693	30,418	1,555	12,676	44,649
1965	8,967	47,900	3,071	18,685	69,656
1970	12,915	76,775	5,727	28,615	111,116
1972	17,566	96,293	6,944	33,168	136,405
1973	19,441	109,504	7,671	36,435	153,610

19.29 Summary of the number of life insurance policies and related amounts in force in Canada reported by federally registered companies, 1972 and 1973

Policies	Number of policies '000		Amounts in force \$'000,000	
	1972	1973	1972	1973
New policies effected during year	701	735	17,566	19,441
Total policies in force Dec. 31	10,383	10,460	136,405	153,610
Policies ceased by death or maturity	134	135	557	623

19.30 Amounts of ordinary¹ and group life insurance policies effected and in force in Canada by federally registered companies, 1972 and 1973 (million dollars)

Policies	Canadian		British		Foreign	
	1972	1973	1972	1973	1972	1973
Effected during year						
Ordinary ¹	6,356	7,246	858	954	2,523	2,930
Group	5,713	6,131	226	203	1,890	1,977
In force Dec. 31						
Ordinary ¹	44,853	49,094	5,346	5,875	16,520	17,655
Group	51,439	60,410	1,598	1,797	16,649	18,780

¹Includes industrial policies.

19.31 Life insurance premiums (direct written), by province, 1973 (million dollars)

Province or territory	Ordinary ¹	Group	Total
Newfoundland	12	4	16
Prince Edward Island	3	1	4
Nova Scotia	37	12	49
New Brunswick	26	8	34
Quebec	337	120	457
Ontario	497	190	687

19.31 Life insurance premiums (direct written), by province, 1973 (million dollars) (concluded)

Province or territory	Ordinary ¹	Group	Total
Manitoba	41	17	58
Saskatchewan	35	13	48
Alberta	80	27	107
British Columbia	109	41	150
Yukon Territory and Northwest Territories	2	—	2
Miscellaneous	17	2	19
Total	1,196	435	1,631

¹Includes industrial policies.**19.32 Major assets and liabilities of federally registered life insurance companies as at Dec. 31, 1972 and 1973 (million dollars)**

Assets and liabilities	Canadian ¹		British ^a		Foreign ²	
	1972	1973	1972	1973	1972	1973
Assets						
Bonds	6,169	6,487	481	496	1,303	1,283
Stocks	1,521	1,658	314	342	7	5
Mortgages	6,634	7,148	410	431	1,222	1,304
Real estate	885	1,039	64	64	57	48
Policy loans	1,167	1,299	48	54	152	157
Other assets	767	787	102	127	119	143
Segregated	1,323	1,543	132	193	70	59
Total	18,466	19,961	1,551 ^a	1,707 ^a	2,930 ^a	2,999 ^a
Liabilities						
Actuarial reserves	13,308	14,328	1,178	1,267	2,271	2,354
Outstanding claims	195	208	9	11	43	46
Amounts on deposit	1,155	1,229	4	5	113	128
Other liabilities	1,226	1,367	38	40	151	162
Segregated	1,313	1,532	136	196	44	42
Total	17,197	18,664	1,365	1,519	2,622	2,732
Surplus or excess ⁴	1,234	1,261	186	189	308	267
Capital stock	35	36	...	...	...	...

¹Assets at book values, in and out of Canada (segregated funds at market values).²Assets at market values, in Canada only.³Includes assets under control of Chief Agent in Canada.⁴Excess of assets over liabilities in Canada for British and foreign companies; for such companies, "capital stock" is not applicable in Canada.**19.33 Major items of income and expenditure of federally registered life insurance companies, 1973 (million dollars)**

Income and expenditure	Canadian ¹	British ^a	Foreign ^a
Income			
Insurance premiums and annuity considerations	2,716	234	453
Investment income — regular funds	1,156	100	200
Net investment gain — segregated funds	-59	3	-7
Other items	71	8	36
Total income	3,884	345	682
Selected expenditure			
Claims incurred	1,285	94	254
Dividends to policyholders	281	25	81
Commissions and general expenses	648	50	115
Taxes, licences and fees	98	-1	54

¹World-wide business.²Business in Canada only.**19.34 Property and casualty net premiums written and net claims incurred, by class of insurance and by incorporation of company, 1973 (million dollars)**

Insurance class	Net premiums written			Net claims incurred
	Canadian	British	Foreign	
Property ¹	273	88	302	435
Automobile	568	162	343	827
Liability	60	20	44	76
Accident and sickness	333	9	226	415
Other casualty ²	55	12	40	42
Marine	5	8	18	16
Total	1,294	299	973	1,811

¹Includes fire, personal property, real property, windstorm, earthquake, inland transportation, livestock, theft, forgery, plate glass.²Includes hail, fidelity, surety, boiler and machinery, aircraft, credit, title, mortgage.

19.35 Property and casualty direct premiums written and claims incurred, by province and by category of company, 1973 (million dollars)

Province or territory	Premiums written		Lloyd's	Total	Claims incurred
	Companies federally registered	Companies provincially licensed			
Newfoundland	36	5	4	45	28
Prince Edward Island	10	1	1	11	6
Nova Scotia	79	1	1	80	53
New Brunswick	72	1	1	74	54
Quebec	713	198	42	953	668
Ontario	1,057	139	20	1,216	826
Manitoba	57	47	2	106	102
Saskatchewan	35	24	1	60	37
Alberta	196	27	9	232	155
British Columbia	294	28	16	338	274
Yukon Territory and Northwest Territories	11	1	1	13	9
Total	2,560	471	97	3,128	2,212

¹Less than \$500,000.

19.36 Major assets and liabilities of federally registered property and casualty insurance companies, 1972 and 1973 (million dollars)

Assets and liabilities	Canadian ¹		British ²		Foreign ²	
	1972	1973	1972	1973	1972	1973
Assets						
Bonds	1,015	1,146	357	324	1,032	1,130
Stocks	360	435	131	133	72	86
Amounts due from agents and premiums receivable	165	195	50	45	92	99
Other	380	500	56	101	176	217
Total	1,920	2,276	594	603	1,372	1,532
Liabilities						
Unearned premiums	441	508	139	126	361	401
Unpaid claims	704	878	182	184	474	588
Other	286	332	18	18	113	121
Total	1,431	1,718	339	328	948	1,110
Surplus or excess ³	369	394	254	275	424	422
Capital stock and amounts transferred	120	164	...	...	...	...

¹Business in and out of Canada, investments on book value basis. Deduction, if any, for excess of market over book value in "Other" assets.

²Business in Canada only, investments on market value basis.

³Excess of assets over liabilities in Canada for British and foreign companies; for such companies, "capital stock" is not applicable in Canada.

19.37 Property and casualty insurance, underwriting results in Canada, 1973 (million dollars)

Registered companies	Underwriting income earned	Claims ¹ incurred	Expenses incurred	Dividends to policyholders	Underwriting gain
Canadian ²					
Property and casualty	956.2	678.4	333.2	1.4	-56.8
A and S branches ³	288.2	236.1	48.5	16.0	-12.4
British	304.4	216.3	106.1	4	-18.0
Foreign					
Property and casualty	729.5	544.6	244.8	4.1	-64.0
A and S branches ³	181.8	128.8	40.2	10.3	2.5
Total, 1973	2,460.1	1,804.2	772.8	31.8	-148.7
1972	2,166.1	1,509.5	695.0	23.4	-61.8
1971	1,953.6	1,326.7	645.6	15.2	-33.9
1970	1,777.4	1,151.0	625.6	16.8	-16.0
1969	1,673.7	1,139.3	582.5	12.9	-61.0

¹Includes adjustment expenses.

²Excludes transactions out of Canada.

³Accident and sickness branches of life insurance companies.

⁴Less than \$500,000.

19.38 Fire losses¹, by province, 1971-73

Province or territory	Property loss		1973 Fires reported	Property loss \$'000	Loss per capita \$
	1971 \$'000	1972 \$'000			
Newfoundland	3,613	4,507	822	7,312	7.38
Prince Edward Island	1,249	1,273	454	1,555	8.97
Nova Scotia	6,291	7,118	1,804	12,888	7.79
New Brunswick	6,263	4,875	1,107	9,592	7.38
Quebec	68,833	78,859	22,597	95,668	10.00
Ontario	82,037	79,237	24,721	114,772	8.58
Manitoba	9,928	14,649	4,595	15,147	9.17
Saskatchewan	5,852	6,569	2,401	6,711	5.62
Alberta	15,699	18,087	8,013	25,629	10.08
British Columbia	34,717	37,389	7,613	45,693	13.53
Yukon Territory and Northwest Territories	1,596	1,703	352	3,252	56.08
Canada	236,077	254,267	74,479	338,219	9.62

¹Excludes forest fires.**19.39 Fire losses¹, by type of property and cause of fire, 1972 and 1973**

Type of property and reported cause of fire	1972		1973	
	Fires reported	Property loss \$'000	Fires reported	Property loss \$'000
Type of property				
Residential	50,552	82,187	45,242	99,557
Mercantile	4,614	52,656	4,010	63,779
Farm	7,937	23,407	7,334	28,094
Manufacturing	1,635	40,515	1,690	56,026
Institutional and assembly	2,420	21,490	2,757	32,361
Miscellaneous	11,737	34,010	13,446	58,403
Total	78,895	254,267	74,479	338,219
Reported cause				
Smokers' carelessness	22,036	18,095	17,481	20,236
Stoves, furnaces, boilers and smoke pipes	5,807	19,948	5,406	22,035
Electrical wiring and appliances	14,782	44,141	11,909	70,826
Matches	2,269	3,514	2,511	6,132
Defective and overheated chimneys and flues	762	2,546	624	1,765
Hot ashes, coals and open fires	3,427	19,120	3,663	21,572
Petroleum and its products	2,404	8,941	2,448	12,536
Lights, other than electric	451	358	410	2,385
Lightning	2,975	2,604	3,334	4,607
Sparks on roofs	108	324	87	338
Exposure fires	1,518	8,620	1,819	9,980
Spontaneous ignition	487	3,460	399	2,830
Incendiarism	3,369	23,763	4,302	37,471
Miscellaneous known causes (explosions, fireworks, friction, hot grease or metal, steam or hot water pipes, etc.)	11,725	45,918	14,082	40,817
Unknown	6,775	52,915	6,044	84,689

¹Excludes forest fires.**Sources**

19.1 - 19.5 Banking and Financial Analysis Department, Bank of Canada.

19.6 - 19.7 Royal Canadian Mint.

19.8 - 19.12 Banking and Financial Analysis Department, Bank of Canada.

19.13 - 19.15 The Canadian Bankers' Association.

19.16 - 19.22 Business Finance Division, Business Statistics Field, Statistics Canada.

19.23 Special Services Division, Department of Insurance.

19.24 - 19.25 Banking and Financial Analysis Department, Bank of Canada.

19.26 - 19.27 Financial Flows and Multinational Enterprise Division, Economic Accounts and Integration Branch, Statistics Canada.

19.28 - 19.37 Special Services Division, Department of Insurance.

19.38 - 19.39 Dominion Fire Commissioner, Department of Public Works.

Chapter 20

Government finance

20.1 Consolidated finance statistics

Consolidated government revenue by source and expenditure by function are presented in Table 20.1 for the years 1968-72. Through the consolidation process, total financial activities of all levels of government in Canada — federal, provincial and municipal — are viewed as emanating from a single government entity. The numerous intergovernmental transactions either as revenue or as expenditure, as the case may be, are eliminated in order to obtain a meaningful measure of the collective impact of all governments upon the general public. Thus multiple accounting for a given transaction is avoided by eliminating from the combined total of either gross general revenue or gross general expenditure all general and specific intergovernment transfer payments as well as all sales and purchases of goods and services which do not constitute an addition to collective government financial activities. The new classification set out in *The Canadian system of government financial management statistics* (Statistics Canada Catalogue No. 68-506) which had been applied for the first time to 1970 data has been extended retrospectively. Consequently, data presented in Table 20.1 are comparable from year to year.

20.2 Federal government finance

20.2.1 General accounts

Tables 20.2 - 20.6 present financial statistics of the federal government prepared in accordance with the revised concepts as published in *The Canadian system of government financial management statistics*. Financial statistics in Tables 20.7 and 20.8 are extracted directly from the *Public Accounts of Canada*.

Tables 20.2 and 20.3 give details of gross general revenue and expenditure for the years ended March 31, 1972 and 1973. Revenue increased from \$18,550 million to \$21,426 million while expenditures rose from \$18,218 million to \$20,912 million.

Transfers from the federal government to provincial governments, territory and local governments for the year ended March 31, 1973 are shown in Table 20.4. Comparable figures for the previous year are available in the 1974 edition of the *Canada Year Book* pp. 772-774.

Table 20.5 provides details of the assets and liabilities of the federal government as at March 31, 1972 and 1973. Table 20.6 analyzes gross bonded debt according to average interest rate, average term of issue and place of payment as at March 31, 1972 and 1973.

In addition to direct gross bonded debt, the Government of Canada has assumed certain contingent liabilities. The major categories of this indirect or contingent debt are the guarantee of insured loans under the National Housing Act and the guaranteed bonds and debentures of the Canadian National Railways. The remainder consists chiefly of guarantees of loans made by chartered banks to the Canadian Wheat Board, to farmers and to university students and of guarantees under the Export Development Act. Table 20.7 provides details of the guaranteed debt of the Government of Canada as at March 31, 1972 and 1973.

Table 20.8 summarizes the public debt position during the period 1969-73 as to interest and amount outstanding. Details of unmatured debt and treasury bills outstanding and information on new security issues of the federal government may be found in the *Public Accounts of Canada*. They are summarized by standard classification in Statistics Canada publication *Federal government finance* (Catalogue No. 68-211).

20.2.2 Individual and corporation taxes

Statistics of income tax collections are gathered at the time the payments are made and are therefore up to date. Over 85% of individual taxpayers are wage- or salary-earners who have almost the whole of their tax liability deducted at the source by their employers. All other taxpayers are required to pay most of their estimated tax during the taxation year. Thus, the greater part of the tax is collected during the same year in which the related income is earned and only a limited residue remains to be collected when the returns are filed. The collections

for a given fiscal year include employer remittances of tax deductions, Canada Pension Plan contributions, unemployment insurance premiums and instalments, embracing portions of two or more taxation years, and year-end payments; they cannot therefore be closely related to the statistics for a given taxation year. As little information about a taxpayer is received when the payment is made and as a single cheque from one employer may frequently cover the tax payment of hundreds of employees, the payments cannot be statistically related to taxpayers by occupation or income. Descriptive classifications of taxpayers are available only from tax returns, but collection statistics, if interpreted with the current tax structure and the above factors in mind, indicate the trend of income in advance of the final compilation of statistics. The statistics given in Table 20.9 pertain to revenue collections by the Department of National Revenue, Taxation. The collections are for fiscal years ended March 31.

Individual income tax statistics collected by the Department of National Revenue, Taxation are presented in Tables 20.10 - 20.12 on a calendar-year basis and are compiled from a sample of all returns received. Taxpayers and amounts of income and tax are shown for selected cities and by occupational class and income classes.

Statistics of corporation positive income tax by industry group by size of assets are collected by Statistics Canada; data for 1969-71 are presented in Table 20.13. Federal and provincial income taxes payable by industrial division are summarized in Table 20.14.

20.2.3 Estate tax

Prior to April 1, 1964 estates or portions thereof situated in provinces which levied succession duties (British Columbia, Ontario and Quebec) qualified for an abatement of 50% of the federal estate tax otherwise payable. Provinces without succession duty levies received from the federal government a payment equal to 50% of the federal tax on estates situated within their boundaries. Effective April 1, 1964, the federal government undertook to pay to the provinces not levying succession duties an additional amount equal to 25% of the federal tax collected on estates situated within their boundaries (i.e. a total of 75%). At the same time, provinces with succession duty levies were given the option of (a) having estates within their provinces qualify for an additional 25% abatement of the federal estate tax; or (b) receiving a payment in an amount equal to 25% of the federal estate tax payable before any abatement (i.e. one half of the amount collected under the 50% abatement arrangement).

British Columbia accepted the first-mentioned option and raised its own succession duty rates. Ontario and Quebec chose the second. Effective January 1, 1972, the federal government withdrew from the field of inheritance taxation. Thus, upon the settlement of outstanding assessments, all revenue of the provinces relating to taxation upon death will arise from direct provincial tax levies and the transfer aspect will disappear. Provincial succession duties are discussed further in Section 20.6.2.

20.2.4 Excise taxes

Excise taxes collected by the Excise Division of the Department of National Revenue are given for the years ended March 31, 1972 and 1973 in Table 20.15.

Gross excise duties collected for the year ended March 31, 1973 were: spirits \$254.8 million; beer or malt liquor \$166.8 million; tobacco, cigarettes and cigars \$225.8 million; licences \$36,031; for a total of \$647.4 million. A drawback of 99% of the duty may be granted when domestic spirits, testing not less than 50% over proof, are delivered in limited quantities for medicinal or research purposes to universities, scientific or research laboratories, public hospitals or health institutions in receipt of federal and provincial government aid.

20.3 Federal-provincial fiscal relations

Fiscal relations between the federal, provincial and territorial governments take various forms and are governed either by an Act of Parliament or by formal agreements between the two levels of government. Through the equalization program the federal government ensures that public resources benefit all Canadians across the country; under Tax Collection Agreements it acts as a tax collecting agent for some provinces; and under other arrangements the federal government shares in the financing of certain programs. These three types of arrangements, general purpose transfer payments, tax collection agreements and specific purpose transfer payments, are covered in this Section.

20.3.1 General purpose transfer payments

General purpose transfers refer to payments from one level of government to another level which the transferee is not required to use for a specific purpose or for specific purposes. They were formerly identified as "unconditional" transfers. The various programs under which they are paid, as well as their amounts for the fiscal year ended March 31, 1973, are indicated in Table 20.4.

Statutory subsidies, established by the British North America Act, 1867, consist of contributions by the federal government toward the support of the governments and legislatures of the provinces. They include an allowance per head of population, allowances for interest on debt and other special amounts as agreed upon under the terms of the union and subsequent to the union. These subsidies amounted to \$33.8 million in the fiscal year ended on March 31, 1973. The share of federal estate taxes remitted to the provinces in 1972-73 (\$12.4 million) is in respect of deaths which occurred prior to January 1, 1972.

Since 1947 the federal government has shared with the provinces the amounts of federal corporation income tax collected from non-government electric and gas utilities operating within each province. The provincial share was raised to 95% from 50% of the amount collected as of January 1, 1966. The intent of this policy was to make available to provinces tax revenue from companies engaged in the exploitation of provincial natural resources.

The most important payments included in general purpose transfers are made under the equalization program. This program, as it is now known, was established in 1967 and slightly revised in 1972. This revision, however, did not modify the basic philosophy of the program according to which all Canadian citizens are entitled to a standard of public services that is fairly comparable among the various regions of the country. In a country as vast as Canada, natural resources and economic wealth are unevenly distributed across the country: some provinces have above-national-average wealth while others are well below that average. Through the equalization system the federal government makes available, from general revenue it collects in all provinces, part of the nation's wealth to provinces with income lower than the national average income, thus making it possible for these provinces to provide reasonable standards of services without recourse to unduly high levels of taxation.

According to the formula set out in the Federal-Provincial Fiscal Arrangements Act, 1972 and amendments, provincial revenue subject to equalization is divided into 20 revenue sources, for each of which a revenue base is defined. The Act was amended in November 1973 to include revenues from school taxes in provincial revenues subject to equalization. To determine the amount of equalization to which a provincial government is entitled, its population as a proportion of the all-provinces' population and its revenue base as a proportion of the all-provinces' revenue base for each of the 20 revenue sources are calculated. Where the former proportion is higher than the latter for any of the revenue sources, the province has a fiscal capacity deficiency for that revenue source; if the magnitude of these proportions is reversed, the province has a fiscal capacity excess. The total revenue of all provinces for each revenue source is multiplied by each province's respective fiscal deficiency or fiscal excess related to the appropriate revenue source and, for any province, the amount of equalization payable is the sum total of the "deficiency" products less the sum total of the "excess" products.

Total equalization payments to the seven provinces having an over-all fiscal capacity deficiency have increased from \$549.6 million in fiscal year 1967-68 to \$1,137.4 million in the year ended March 31, 1973. Provinces receiving such payments are indicated in Table 20.4.

20.3.2 Tax collection agreements

Tax Collection Agreements, replacing the tax-sharing system in operation since 1951, were introduced in 1962 under the Federal-Provincial Arrangements Act, 1962. Under these agreements, the federal government undertook to collect provincial personal and corporation income taxes on behalf of the provinces. All provinces, except Quebec, signed the agreements in respect of personal income tax, and all provinces except Quebec and Ontario entered into agreements covering the collection of corporation income tax.

An abatement system, introduced in 1962 and amended in 1967, facilitated the establishment by the provinces of their own tax rates. Under this system the abatement was deducted in determining the federal personal income tax payable and this amount, plus any

additional tax imposed by the province, constituted the provincial personal income tax payable. The abatement was set in 1967 at 28% of federal "basic tax" for personal income tax and at 10% of the taxable income of corporations for corporation income tax.

The 1967 Act was amended in 1972 in order to adjust the terms of the agreements to the new federal Income Tax Act introduced in 1972 following the tax reform. In the 1972 amendment the abatement system was abandoned as was the reference to federal "basic tax". Instead, the federal rates of personal income tax were adjusted downward for the full amount of the former provincial abatement. This downward adjustment corresponded to 30.5% of "basic federal tax" and is equivalent to the former 28% abatement.

In addition, Part IV of the Federal-Provincial Fiscal Arrangements Act, 1972, provided a guarantee that for five years the provinces would not suffer a loss of income tax revenue as a result of adopting income tax Acts modelled on the new federal Act, provided that their rates are equivalent to those levied under the previous Act. Revenue is guaranteed at a yield level equal to that obtained through the projection of 1971 rates.

20.3.3 Specific purpose transfer payments

This type of transfer payment is generally referred to as conditional grants, that is grants which are to be used for a specific purpose by the receiving government. Most of these grants are made under agreements governing joint federal-provincial programs. Total federal payments to provinces and municipalities of this nature have increased from \$1,816.7 million in 1969-70 to \$3,008.4 million in 1972-73, as shown in Table 20.4.

These programs take three forms: the federal government contributes financial assistance to a program administered by a province; the federal and provincial governments each assume the sole responsibility for the construction, administration and financing of separate aspects of a joint project; or the province contributes financially to a joint program administered by the federal government.

The first category of joint programs is by far the most common. The federal government agrees to make money available to a province on certain conditions such as specification of the field, service or project to which the money must be applied. In addition to administering the programs, the provinces may be required to make financial contributions or to provide certain facilities and to meet certain specified standards of operation. Various programs in the field of social policy are of this kind. For example, the federal government undertakes to contribute to participating provinces a specified share of the costs incurred by the provinces in respect of public hospital insurance programs. The federal contribution in each province is equal to 25% of the average per capita cost of in-patient services in Canada as a whole plus 25% of the average per capita cost of in-patient services in the province, multiplied by the average for the year of the number of insured persons in the province.

Although the hospital insurance program, with its specifications of eligible hospitals, sharable costs and the amount of the federal contribution, is characteristic of many conditional grant programs, there are others in which the conditions are nominal. For example, under the Canada Assistance Plan the federal government undertakes to share one half the cost of welfare paid to recipients in need; the scale and conditions of the assistance being determined by the provinces.

Joint programs in the second category — those in which the federal and provincial governments accept sole responsibility for portions of a total project — are not numerous and are generally of a public works nature. The irrigation projects carried out jointly by the Prairie Farm Rehabilitation Administration and the province of Alberta on the St. Mary's and Bow rivers in southern Alberta were of this nature.

Joint programs in the third category are also few in number. The South Saskatchewan River dam was an example: Canada undertook to pay the costs of the dam in the first instance, with Saskatchewan subsequently reimbursing Canada for one quarter of the federal expenditures (up to a maximum of \$25 million) on the dam and reservoir. By March 31, 1968, the full amount had been recovered from Saskatchewan.

Federal transfers to the provinces in the form of specific purpose grants increased from \$75 million in the year ended March 31, 1954, to \$3,044.1 million in 1972-73. The increase is attributable largely to the introduction of the hospital insurance and diagnostic services program in 1958, medicare in 1968, increases in the level of assistance, and the integration of welfare programs under the Canada Assistance Plan which began in 1966-67. In 1972-73

federal contributions to the programs in respect of hospital and diagnostic services, medicare, and welfare programs integrated with and into the Canada Assistance Plan amounted to \$1,355.5 million, \$629.3 million and \$778.5 million, respectively. These amounts include the value of income tax abatement to Quebec of \$358.8 million and \$106.3 million, respectively. Further details are given in Table 20.16.

In 1965 provinces were given the option to assume full financial and administrative responsibility for certain programs in return for fiscal compensation and to this end, the federal government enacted in April 1965 the Established Programs (Interim Arrangements) Act. The nature and number of programs were itemized in the schedules to the Act. Schedule I listed the major conditional grant programs of a continuing nature and Schedule II listed smaller and more transient programs. The Schedule I programs were: hospital insurance, old age assistance, blind persons' allowances, disabled persons' allowances, and the welfare portion of unemployment assistance; the technical and vocational training programs for youths who were not yet members of the labour force; and the health grant program, except those elements that involved research and demonstration. The Schedule II programs were: agricultural lime assistance; forestry programs; hospital construction grants; campgrounds and picnic areas; and the roads-to-resources program. The Act was subsequently amended to include the Canada Assistance Plan.

A province wishing to avail itself of the provisions of the Established Programs (Interim Arrangements) Act in respect of a Schedule I program, was required to enter into a supplemental agreement in which it undertook to assume full responsibility for the administration and financing of the program. On the other hand, the federal government undertook to abate, by a specified percentage, the individual income tax on the income of residents of the province, pay associated equalization and make an operating cost adjustment. The operating cost adjustment payment or recovery was to ensure that a province did not suffer or benefit financially through assuming the financing of the federal share of the former joint program. Because of their smaller size and lack of continuity, the compensation associated with a Schedule II program did not provide for federal tax abatement or associated equalization payments. Compensation of these programs was to be paid directly to the province by the federal Minister of Finance.

The Established Programs (Interim Arrangements) Act was designed to provide for an interim period during which a province might assume greater administrative and financial responsibility for the programs listed and during which time more permanent arrangements governing joint programs might be devised. The length of the interim period was set out in the Act for each program and varied from March 31, 1967 to December 31, 1970. The tax abatement associated with Schedule I programs was also set out in the Act and varied from 1% for the health grant program to 14% for hospital insurance. Amendments made to the Act in 1972 extended the length of the interim period for the special welfare and hospital insurance programs to March 31, 1977 and December 31, 1977, respectively. The interim period for the health grants program was not extended beyond March 31, 1972 as this program was being phased out. Also, tax abatement points associated with the hospital insurance program were raised in 1972 to 16 points and with the special welfare program to five points. The increase was occasioned by the reassignment of the one point associated with the defunct health grants program and conversion of the value of tax points to their approximate value under the 1972 revised Income Tax Act. Quebec alone availed itself of the provisions of this legislation.

20.4 Provincial government finance

Because of considerable variation from province to province in administrative structures and, to a lesser extent, in accounting and reporting practices, adjustments have to be made to financial data reported in the public accounts of the provinces and territories to produce statistics which will be comparable between different provinces and with those for the other levels of government. In 1972 the concepts and classifications of the national system of government financial statistics were reviewed and redefined by Statistics Canada (see *The Canadian system of government financial management statistics*, Catalogue No. 68-506). Financial statistics for the years 1971 onward are compiled in accordance with these revisions to the system and are not comparable with data for prior years published in earlier editions of the *Canada Year Book*. An historical revision of these earlier data to conform with the revised

concepts and classifications is now in progress but it will be some time before this is completed and published.

Gross general revenue and expenditure for the years ended March 31, 1972 and 1973 are given in Table 20.17, liabilities in Table 20.18, and liabilities (of other governments and entities) guaranteed by provincial and territorial governments in Table 20.19. More information on outstanding provincial bonds and debentures is contained in Table 20.20.

20.5 Local government finance

Local government taxation. In 1971, the latest year for which complete data are available, local government revenue from taxation rose by 3.5% to \$3,729 million and the rate of collections stood at 99.7%. This rate is not comparable with previous years' rates, since it includes Quebec local governments collections for the first time. Taxes receivable expressed as a proportion of taxation revenue declined slightly to 11.7% compared to 11.8% in 1970. In most provinces, rates of collections improved in 1971 as compared with previous years, while they declined somewhat in the two territories. Conversely, lower percentages of taxes receivable relative to taxation revenue were recorded in Newfoundland, Prince Edward Island, Ontario, Manitoba and Alberta.

Local government revenue, expenditure and debt. As in previous years, gross revenue and expenditure of local governments increased in 1971. However, as indicated in Section 20.4, financial statistics for 1971 cannot be compared with data for prior years because of the introduction of the concepts and classifications set forth in *The Canadian system of government financial management statistics*. Debenture and other long-term debt amounted to \$9,251 million as at December 31, 1971 compared with \$8,748 million as at December 31, 1970 and \$8,290 million in 1969. Details are given in Tables 20.21 - 20.23.

20.6 Tax rates

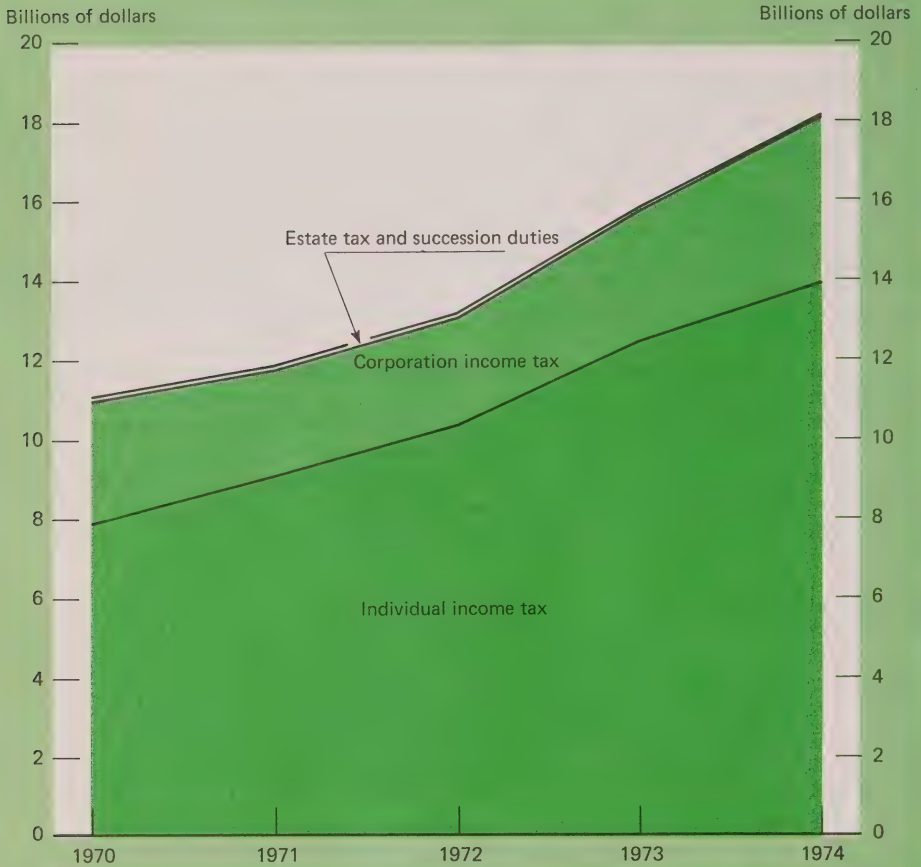
Taxes are imposed in Canada by the federal government, by provincial governments and by municipalities. The Government of Canada has the right to raise money "by any mode or system of taxation" while the provincial legislatures are restricted to "direct taxation within the province in order to the raising of a revenue for provincial purposes". Thus, the provinces have a right to use only the field of direct taxation and the federal government is not subject to any constitutional restriction in matters of taxation. Municipalities derive their incorporation with its associated powers, fiscal and otherwise, from the provincial government concerned and are thus also limited to direct taxation.

A direct tax is generally recognized as one "which is demanded from the very person who it is intended or desired should pay it". This concept has limited the provincial governments to the imposition of income tax, retail sales tax, succession duties and an assortment of other direct levies. In turn, municipalities acting under provincial legislation tax real estate, water consumption and places of business. The federal government levies taxes on income, excise taxes, excise and customs duties, and a sales tax.

Starting in 1941, a series of federal-provincial tax agreements were concluded to promote the orderly imposition of direct taxes. The duration of each agreement was normally five years. Under the earlier agreements, the participating provinces undertook — in return for compensation — not to use, or permit their municipalities to use, certain of the direct taxes. Under more recent arrangements, the federal personal and corporation income tax otherwise payable in all provinces and the estate tax otherwise payable in three provinces were abated by certain percentages to make room for provincial levies.

Federal tax reform amendments which became effective for the most part from the beginning of 1972, included a new personal income tax rate structure which was not designed to be abated in the previous way. At the same time the federal estate tax was terminated. As a result, the arrangement under which federal taxes are abated has general application only for the corporation income tax. All provinces impose taxes on the income of individuals and corporations and five of the 10 provinces impose taxes on property passing at death. Alberta, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland do not now impose succession duties. As part of the current fiscal arrangements, the federal government has entered into tax collection agreements under which it collects provincial personal income taxes

Net revenue ¹ collected by the Department of National Revenue, Taxation, 1970-74



1. Excludes special refundable tax.

for all provinces except Quebec and provincial corporation income taxes for all provinces except Ontario and Quebec. By the end of 1974 all provinces which impose succession duties will be collecting their succession duties themselves.

20.6.1 Federal taxes

Individual income tax. Personal income tax in Canada is imposed on the basis of residence. Every individual who is resident in Canada at any time during a year is liable for the payment of income tax on all his income. A non-resident is liable for tax only on income from sources in Canada. The term "residence", generally speaking, is the place where a person resides or where he maintains a dwelling ready at all times for his use. There are also statutory extensions of the meaning of "resident" to include a person who has sojourned in Canada for an aggregate period of 183 days in a taxation year, or a person who was during the year a member of the Armed Forces of Canada, or an officer or servant of Canada or of any one of its provinces, or the spouse or dependent child of any such person. The extended meaning of

resident also includes employees who go from Canada to work under certain international development assistance programs.

Canadian tax law uses the concepts "income" and "taxable income". The income of a resident of Canada for a taxation year comprises his revenues from all sources inside or outside Canada and includes income for the year from businesses, property, offices and employments. Since January 1, 1972, it has also included one half of any capital gains.

In computing his income, an individual must include benefits from employment, fees, commissions, dividends, annuities, pension benefits, interest, alimony and maintenance payments. Also included are unemployment insurance benefits, scholarships in excess of \$500, benefits under a disability insurance plan to which his employer contributes and other miscellaneous items of income. On the other hand, war service disability pensions paid by Canada or a country that was an ally at the time of the war service, social assistance payments made on a needs-test basis under a prescribed program, compensation in respect of an injury or death paid under a Workmen's Compensation Act of a province and family income security payments do not have to be included in the computation of income.

An employee does not have to include in his income, allowances paid to him by his employer to cover travelling expenses to a distant work site, or board and lodging while at the site. In order to qualify, the worker must travel away from his ordinary residence in which he supports his wife or other dependent, the work site must be temporary and the time away from his ordinary residence must be at least 36 hours.

Certain amounts are deductible in computing income. These include contributions to a registered employees pension plan, premiums to a registered retirement savings plan, premiums under the unemployment insurance program, alimony payments and union dues. Beginning in the 1974 taxation year a taxpayer 18 years of age or over who does not own a house may deduct contributions, of up to \$1,000 a year, to a lifetime maximum of \$10,000, to a registered home ownership savings plan. The proceeds of such plans will be taxable when they are paid to the taxpayer unless they are applied by him to the purchase of a home or home furnishings. An employee may deduct 3% of his salary or wages (up to a maximum of \$150 a year) to cover expenses of earning his income. No receipts or details of actual expenditures are necessary to claim this deduction. Expenses of meals and lodging while away from home are deductible by employees who have to travel as they perform their work, such as employees who work on trains or who drive trucks. Where a mother has her children cared for in order that she may work, she may deduct this expense subject to certain limitations. A father may deduct child care expenses where he is the only parent of the family or where the mother is incapable of caring for the children. Expenses of moving to a new work location are deductible from income earned in the new location. These moving expenses may be deducted by salary- or wage-earners, self-employed persons and, in some instances, by students at post-secondary educational institutions. Students attending universities, colleges, high schools or certain other certified educational institutions in Canada may deduct their tuition fees if they exceed \$25 a year. Students in full-time attendance at universities outside Canada are also allowed to deduct their tuition fees.

An individual carrying on a business may deduct his business expenses in computing his income. These include wages, rents, depreciation (called capital cost allowances), municipal taxes, interest on borrowed money, reserves for doubtful debts, contributions to pension plans or profit-sharing plans for his employees, and bad debts.

All individuals must now count half of their capital gains as income. The taxable capital gains of an individual are determined by deducting his capital losses from his capital gains and dividing by two. In the event that an individual's losses exceed his capital gains, \$1,000 of his allowable capital losses may be deducted from other income. Losses not deducted in the year incurred may be carried back one year or forward to future years to be deducted. Capital gains or losses are those realized on the disposition of property. Other gains or losses such as from a lottery or gambling are not included. The sale of personal property at a price not exceeding \$1,000, and the sale of a taxpayer's home, do not create a capital gain or loss. A sale or disposition of property is deemed to have taken place when the taxpayer dies or makes a gift of property unless the property is left or given to his spouse. On the first disposition, after the beginning of the system, of capital property owned before the beginning of the system, a capital gain is computed by reference to the higher of cost or valuation-day value and a capital loss by reference to the lower of cost or valuation-day value. Thereafter the capital gain or

capital loss on the disposition of a capital property is determined by reference to the property's adjusted cost base. The adjusted cost base is, subject to a number of adjustments, the cost to the taxpayer of the property. When property is acquired after valuation day, actual cost plus or minus adjustments after that date will give the adjusted cost basis. Valuation day for purposes of shares that are publicly traded on Canadian stock exchanges was December 22, 1971 and the valuation day for all other property, such as bonds, rental property, cottages or shares in a private company was December 31, 1971. Special rules apply for individuals who become, or cease to be, residents of Canada. Gains arising out of the conduct of a business continue to be fully taxable.

Having computed his income, the individual then calculates his taxable income by deducting certain exemptions and deductions. Before 1974 the levels of exemptions and deductions were fixed from time to time by Parliament. The introduction in the 1974 taxation year of a mechanism for indexing personal income tax will result in automatic adjustments each year, to reflect the inflation rate, in the levels of exemptions and deductions. The adjusted personal exemptions and deductions for the 1975 taxation year are: for single status, \$1,878; for married status, \$3,522; for dependent children under age 16, \$352 for each child; for other dependents (as defined in the law), including dependent children over age 15 and under 21 or over 20 and attending school, \$646 for each dependent; charitable donations, up to 20% of income; and medical expenses, the amount in excess of 3% of income. In lieu of claiming deductions for charitable donations and medical expenses an individual may claim a standard deduction of \$100. Where a taxpayer is 65 years of age or over or blind or confined to a bed or wheelchair for a substantial period each day during the whole of a 12-month period ending in the year, he may deduct \$1,174. To the extent that a taxpayer who qualifies for either the age or disability deduction cannot use the deduction it may be transferred to his or her spouse.

The extra deduction for married status is reduced if the taxpayer's spouse has income in excess of \$334. The deduction of \$352 for supporting a child is reduced if the child has income in excess of \$1,274 and the deduction of \$646 is reduced if the dependent has income in excess of \$1,332. The amount of the guaranteed income supplement, which is a payment made to individuals who have little or no income in addition to their old age pension is deductible in computing taxable income. Individuals who have incurred business losses in other years may deduct these in computing taxable income.

Recent amendments to the Income Tax Act have introduced new deductions from a taxpayer's income in the computation of his taxable income. For the 1974 taxation year, a taxpayer may deduct up to \$1,000 of his interest income in the year. For the 1975 and subsequent taxation years, the deduction is broadened so that a taxpayer may also deduct his dividend income. A taxpayer will thus be able to deduct up to \$1,000 of any combination of his interest and dividend income in the year. Further, the interest and dividend deduction will operate so that the first \$1,000 of interest and dividend income received by a taxpayer in a year will not reduce his or her spouse's marital exemption.

Another new deduction from income, effective for the 1975 taxation year, is the pension income deduction. By virtue of the deduction, a taxpayer who is 65 years of age or over will be able to deduct up to \$1,000 of his pension income including amounts he receives from pension plans and from annuities under registered retirement savings plans and deferred profit sharing plans. A taxpayer under 65 years of age may deduct his "qualified pension income". Qualified pension income includes amounts received by a taxpayer from a pension plan and certain amounts the taxpayer receives as a consequence of the death of his or her spouse. The pension income deduction is transferable between spouses to the extent that the spouse of a taxpayer cannot use his or her deduction.

As already stated, an individual who is resident in Canada is taxed on his income from both inside and outside Canada. An individual who is not resident in Canada at any time during the year but who carries on business in Canada or who earns salary or wages in Canada is taxed on the income earned in Canada. In computing taxable income earned in Canada, such a non-resident individual is allowed to deduct that part of the exemptions and deductions that may reasonably be attributed to the income earned in Canada. An individual who ceases to be a resident of Canada during the year or who becomes a resident during the year so that he is resident for only part of the year is subject to income tax as a resident of Canada on only that part of his income for the year received while he is resident in Canada. In these circumstances, the deductions from income permitted in determining taxable income are the

amounts which may reasonably be considered as applicable to the period during which he is resident in Canada.

A non-resident who disposes of taxable Canadian property (shares of Canadian public corporations are excluded unless ownership exceeds 25%) is liable for tax on one half of any capital gain. Capital gains or losses from the disposal of taxable Canadian property are combined with the non-resident's Canadian employment or business income. This taxation of capital gains is subject to restrictions in a number of tax treaties between Canada and other countries.

Two provisions were enacted in 1971 to provide for averaging income over a period of years where income for a year is unusually high. The first of these is an averaging calculation that will be made by the Department of National Revenue if an individual's income for the year is 20% more than the average of his incomes for the preceding four years and 10% more than his income for the immediately preceding year. This calculation, which will be made without application by the taxpayer, will reduce the effects of the progressive schedule of rates upon an unusual increase in income in the year. The calculation will first be made for 1973, using 1972 as a base. It will not be possible to use four preceding years in the base until 1976. The second averaging device, which first became effective for 1972, is by the purchase of a special type of annuity contract called an income-averaging annuity. The cost of this annuity contract is deductible from income in the year it is purchased and the annuity payments are included in income when received. Only certain kinds of income may be used to purchase an income-averaging annuity. These include capital gains, a lump sum from a pension plan, proceeds from a literary or artistic work or amounts received from activities as an athlete, musician or public entertainer.

The amount of tax is determined by applying a progressive schedule of rates to taxable income. The tax bracket limits are adjusted yearly by means of the indexing mechanism to reflect the rate of inflation. Thus taxpayers are prevented from being pushed into higher marginal tax brackets in the absence of real growth in their income. The schedule of rates starts at 9% on the first \$587 of taxable income (first unit) and increases to 47% on taxable income in excess of \$70,440. The Income Tax Act provides that the rate of tax on the first bracket of taxable income will be reduced to 6% in 1976.

After all calculations are made, there may be deducted from the tax otherwise payable an amount, called the federal tax credit, equal to the greater of \$200 or 8% of tax payable to a maximum of \$750.

Individuals who reside in the Yukon Territory or the Northwest Territories or who reside outside Canada but are deemed to be residents in Canada for tax purposes (such as diplomats and others posted outside the country) must pay an additional tax of 30% of their tax otherwise payable. This tax is intended to correspond in an approximate way to the income tax imposed by the provinces on their residents.

An individual who receives a taxable dividend from a Canadian corporation is allowed to deduct an amount called a dividend tax credit from his tax otherwise payable. This is in recognition of the fact that the earnings from which the dividend is paid have borne corporation income tax. It also provides encouragement for Canadians to participate in ownership of Canadian corporations. The individual increases the amount of the dividends he has received by one third and includes this additional one third in his income. He then deducts from his tax an amount equal to four fifths of the additional one third that was included in his income.

An individual who receives income from foreign sources may deduct from his tax the amount of tax he has paid to a foreign government on his foreign source income. This deduction may not exceed the Canadian tax related to such income.

An individual who earns income in Quebec may deduct 24% of his tax attributable to such income. This abatement of tax is in recognition of the fact that Quebec entirely finances certain programs which are partly financed by the federal government in other provinces.

To a very large extent, individual income tax is payable as the income is earned. Taxpayers in receipt of salary or wages have tax deducted from their pay by their employer and in this way pay nearly 100% of their tax liability during the calendar year. The balance of the tax, if any, is payable at the time of filing the tax return on or before April 30 of the following year. Individuals with more than 25% of their income in a form not subject to tax deductions at the source must pay tax by quarterly instalments throughout the year. Returns of these

individuals must be filed on or before April 30 of the following calendar year. Farmers and fishermen pay two thirds of their tax on or before December 31 each year and the remainder on or before April 30 of the following year. Table 20.24 shows the amount of personal income tax payable on various levels of income in 1975.

Corporation income tax. The Income Tax Act levies a tax upon the income from anywhere in the world of corporations resident in Canada and upon the income attributable to operations in Canada of non-resident corporations carrying on business in Canada. One half of capital gains must be included in income. In computing their income, corporations may deduct operating expenses including municipal real estate taxes, reserves for doubtful debts, bad debts and interest on borrowed money. The deduction for interest includes interest on money borrowed to acquire shares in another corporation. There is a limitation on the deduction of interest paid to non-residents. One half of capital losses may be deducted from the capital gains included in income.

Corporations may deduct over a period of years the capital cost of all depreciable property. The yearly deductions of normal capital cost allowances are computed on the diminishing balance principle. Regulations issued under authority of the Income Tax Act established a number of classes of property and maximum rates. Typical rates include 5% for most buildings, 20% for machinery and 30% for automobiles. Where property is disposed of for more than the amount to which it has been written down by capital cost allowances, the excess allowances are "recaptured" through an addition to income or by an adjustment to the undepreciated balance for the class of property.

Accelerated depreciation (full write-off in two years) is allowed in respect of structures and equipment acquired by manufacturers and processors after May 8, 1972 for use in Canada.

Current or capital expenditures on scientific research related to the business of the taxpayer may be written off for tax purposes in the year when incurred or any subsequent year.

A corporation whose principal business is mining, oil production and allied activities may deduct the costs of exploration in Canada against any income in the year the costs were incurred or in subsequent years. Development costs which previously were treated like exploration costs must be amortized at 30% per annum for costs incurred after May 6, 1974. Taxpayers who do not meet the "principal business" test are entitled to deduct exploration and development expenses incurred after May 6, 1974, at a rate of 30% per annum from other income. Taxpayers may deduct certain foreign drilling expenses from directly related foreign-source income. Starting in 1972, all taxpayers may put foreign exploration and development expenses in a separate asset class and deduct them over a period of years if they exceed income from foreign mineral and petroleum properties.

Capital equipment and facilities for a new mine may be written off immediately against income from the mine. The assets eligible for this accelerated depreciation include buildings, mining machinery, processing facilities and "social capital" such as access roads, sewage plants, housing, schools, airports and docks. The accelerated write-off provision for new mines will also apply in the case of a major expansion of an existing mine where there has been at least a 25% increase in milling capacity. The list of eligible assets is the same as for new mines except that "social capital" does not qualify.

Taxpayers operating mines, oil wells, gas wells and wells for extracting potash by the solution method have been allowed a depletion allowance, usually computed as a percentage of profits (after deduction of capital cost allowances, exploration and drilling expenses and certain interest expenses) derived from mineral, oil or gas production. This allowance is in addition to capital cost allowances on buildings, machinery and similar depreciable assets used by the taxpayer and the deduction of his exploration and drilling expenses. This automatic deduction for depletion ended on May 6, 1974 after which a taxpayer will be able to deduct depletion only if it has been "earned" by exploration or development or certain new mine assets or assets acquired for a major expansion of a mine. For every \$3 of eligible expenditures, a taxpayer will earn the right to deduct \$1 of depletion. Eligible expenditures made after November 7, 1969 can be accumulated for the purpose of calculating earned depletion.

Taxpayers operating timber limits receive an annual cost allowance with respect to the cost of the limit. The rate of the allowance is based on the amount of timber cut in the year.

In computing taxable income, corporations, with certain exceptions, may deduct dividends received from other Canadian taxable corporations and also from certain non-resident affiliates. Business losses may be carried back one year or forward five years and deducted in computing taxable income. Corporations may also deduct donations to charitable organizations up to a maximum of 20% of their income.

The general rates of tax payable by corporations on their taxable income are as follows: 1972, 50%; 1973, 49%; 1974, 48%; 1975, 47%; 1976 and subsequent years, 46% except that starting January 1, 1973 the effective rate for manufacturing and processing profits is 40%. These rates of tax are reduced by 10 percentage points on income earned in a province. This "provincial abatement" is provided to make room for provincial income taxes. At the present time, provincial rates of corporate income tax range from 10% to 13%.

A "small business deduction" reduces the rate of tax on certain business income to 25%. This concession is restricted to Canadian corporations which are not controlled by a non-resident or by a Canadian public corporation. It applies only to income from an active business carried on in Canada and not to investment income. The maximum amount of taxable income on which the deduction may be calculated is \$100,000 in any one year. A corporation is entitled to this deduction only until it has accumulated \$500,000 of taxable income commencing with taxation years starting after 1971. Starting January 1, 1973, this 25% rate is reduced to 20% for Canadian manufacturing and processing profits.

A corporation that qualifies as an "investment corporation" pays tax at a rate of only 25%. This rate is also reduced by the provincial abatement.

The investment income (other than dividends) of a private corporation is subject to the general rate of tax (i.e. 50% in 1972 becoming 46% in 1976 less the provincial abatement) but an amount not exceeding 25% of this income is refunded when dividends are paid to shareholders.

Dividends received by a Canadian corporation from other Canadian corporations and certain dividends from foreign corporations are deductible in computing its taxable income. Dividends received by a private corporation from portfolio investments are subject to a special 33½% tax but this is refunded when dividends are paid to shareholders.

A corporation may elect to pay a special 15% tax on its 1971 undistributed income on hand. Dividends received from this tax-paid undistributed income are not included in the income of the receiving shareholder but the amount of the dividend will reduce the adjusted cost basis of the shares for capital gains tax purposes. Dividends paid from the untaxed half of a corporation's capital gains are also excluded from the income of the recipient shareholders but with no similar reduction in the adjusted cost base of the shares for capital gains tax purposes.

Special rules are provided for the taxation of special-purpose companies such as mutual fund corporations, life insurance companies, non-resident-owned investment companies and co-operatives.

In addition to the reduction equal to 10% of taxable income earned in a province, a corporation may reduce its tax by a credit for taxes paid to foreign governments on foreign source income. This credit may not exceed the Canadian tax related to such income. A corporation may also deduct from its tax an amount equal to two thirds of a provincial tax on income from logging operations not exceeding 6½% of its income from logging operations in the province. (At present only Quebec and British Columbia impose logging taxes.)

After May 6, 1974, provincial levies on mineral or petroleum resources are not allowed as a deduction from income, and there is an extra federal tax abatement on production profits at the rate of 15% for minerals and at the rates of 10% in 1974, 12% in 1975 and 15% for 1976 and subsequent years for petroleum.

Corporations are required to pay their tax by monthly instalments throughout their taxation year. Any balance of tax remaining has to be paid by the last day of the second month following the close of the taxation year, except for corporations claiming the small business deduction, which have until the last day of the third month following the year to pay that balance. The return for the year must be filed by the last day of the sixth month following the close of the taxation year.

Taxation of non-residents. An individual or corporation not resident in Canada is liable for Canadian income tax on income from employment or from carrying on business in Canada

and on one half of capital gains less losses on disposals of "taxable Canadian property". For this purpose taxable Canadian property includes: real property interests situated in Canada; assets used in carrying on business in Canada; interests in certain partnerships and trusts; shares in a corporation resident in Canada other than a public corporation; and shares in Canadian public corporations where the non-resident owns a 25% or greater interest. The taxation of capital gains may be restricted by the provisions in tax treaties between Canada and other countries.

The expression "carrying on business in Canada" includes producing, growing, packaging or improving any article in Canada and also soliciting orders or offering anything for sale in Canada through an agent or servant. However, this is usually modified by tax treaties so that an enterprise of the other country is taxed by Canada on its industrial and commercial profits only if it carries on business through a permanent establishment in this country.

The taxable income of non-resident individuals derived from employment or carrying on business or from capital gains in Canada is taxed under the same schedule of rates as Canadian resident individuals.

Income earned by non-resident corporations carrying on business or from capital gains in Canada is taxed at the regular rates of corporation income tax. The distributable business earnings of a branch of a non-resident corporation are also subject to an additional tax often referred to as a branch tax. This tax applies to the branch earnings net of taxes that are not reinvested in the business in Canada. The branch tax, which is imposed at the same rate as the non-resident withholding tax on dividends referred to below, is designed to place non-resident corporations that carry on business through a branch in Canada in a comparable position to those non-residents that conduct their Canadian operations through a separate company incorporated in Canada.

Certain specific items of income paid to non-residents from sources in Canada are subject to tax withheld at the source by the Canadian payer. This non-resident withholding tax applies to interest (except interest on certain bonds and interest paid to certain exempt lenders), dividends, rents, royalties, management fees, income from a trust or estate, alimony, pension benefits (other than the old age security pension and up to \$1,290 of Canada Pension Plan or Quebec Pension Plan benefits), proceeds from deferred income plans and the taxable portion of annuities. The rate of this tax is generally 15% but the rate on royalties from motion picture and television films is only 10% and the standard rate of 15% on dividends is reduced to 10% in the case of dividends paid by a corporation that has a degree of Canadian ownership. Generally, a corporation is regarded as having a degree of Canadian ownership where 25% of its equity and voting shares are owned by Canadians and/or corporations controlled in Canada, or where the voting shares of the corporation are listed on a Canadian stock exchange and no more than 75% of its issued outstanding voting shares are owned by a non-resident alone or in combination with related persons.

The Income Tax Act provides that the rate of the above-mentioned non-resident withholding tax will become 25% in 1976, except for the rate on dividends paid by a corporation with a degree of Canadian ownership which will be 20%. These rates may be modified by tax treaties.

Non-residents who receive from sources in Canada only the kinds of income subject to the non-resident withholding tax do not file returns to Canada. However, those who receive rents on real property, timber royalties, pension benefits or proceeds from deferred income plans may elect to file returns and be taxed at personal or corporation rates as the case may be.

Estate and gift taxes. The federal government formerly imposed an estate tax and a tax on gifts. They do not apply in the case of a death occurring after 1971 or to a gift made after 1971.

Excise taxes. The Excise Tax Act levies a general sales tax and special excise taxes. These taxes are levied on goods imported into Canada as well as on goods produced in Canada. They are not levied on goods exported.

The general sales tax is at the rate of 12%. It is levied on the manufacturer's sale price of goods produced or manufactured in Canada or on the duty-paid value of goods imported into Canada. "Duty-paid value" includes the amount of customs duties, if any. For alcoholic beverages and tobacco products the sale price for purposes of the sales tax includes excise duties levied under the Excise Act. The rate of sales tax on a long list of construction materials and equipment for building is 5% instead of 12%.

Some goods are exempt from sales tax. Drugs, electricity, fuels for lighting or heating, all clothing and footwear, foodstuffs and a comprehensive list of transportation and construction equipment are exempt. In addition articles and materials purchased by public hospitals and certain welfare institutions are not subject to sales tax. The products of farms, forests, mines and fisheries are, to a large extent, exempt as is most equipment used in farming and fishing. Machinery and equipment used directly in production, materials consumed or expended in production and equipment acquired by manufacturers or producers to prevent or reduce pollution to water, soil or air from their manufacturing operations are all exempt. A number of items are exempt when purchased by municipalities. These and other exemptions are set forth in the schedules to the Excise Tax Act.

The Excise Tax Act also imposes a number of special excise taxes which are in addition to the sales tax. Where these are ad valorem taxes they are levied on the same price or duty-paid value as the general sales tax. Those levied at present are given in Table 20.25.

Excise duties. The Excise Act levies taxes (referred to as excise duties) upon alcohol, alcoholic beverages (other than wines) and tobacco products. These duties are not levied on imports but the customs tariff applies special duties to these products equivalent to the excise duties levied on the products manufactured in Canada. Exported goods are not subject to excise duties.

The duties on spirits are on a proof gallon basis. They do not apply to denatured alcohol intended for use in the arts and industries, or for fuel, light or power, or any mechanical purposes. The various duties are as follows: on every gallon of the strength of proof distilled in Canada, \$16.25; on every gallon of the strength of proof used in manufacture of: medicines, extracts, pharmaceutical preparations, etc., \$1.50 a gallon; approved chemical compositions, 15 cents a gallon; spirits sold to a druggist and used in the preparation of prescriptions, \$1.50 a gallon; imported spirits when taken into a bonded manufactory in addition to other duties, 30 cents a gallon.

Canadian brandy (a spirit distilled exclusively from juices of native fruits without the addition of sweetening materials) is subject to an excise duty of \$14.25 a proof gallon. All beer or other malt liquor is subject to a duty of 42 cents a gallon.

Excise duties are imposed on tobacco, cigars and cigarettes in addition to the special excise taxes which have already been described. The rates of excise duty are as follows: on manufactured tobacco of all descriptions, except cigarettes, 50 cents a lb.; cigarettes weighing not more than three lb. per thousand (nearly all of the cigarettes used in Canada are of this type), \$5 a thousand; cigarettes weighing more than three lb. per thousand, \$6 a thousand; cigars, \$2 a thousand; Canadian raw leaf tobacco when sold for consumption, 10 cents a lb.

Total taxes on tobacco products. The aggregate of taxes imposed on tobacco products under the Excise Tax Act and the duties imposed under the Excise Act are: cigarettes, \$11 a thousand (22 cents a pack of 20 cigarettes) plus the 12% sales tax on the manufacturer's sale price; pipe and cut tobacco, \$1.40 a lb. plus the 12% sales tax on the manufacturer's sale price; cigars, \$2 a thousand plus the 20.5% special excise tax and the 12% sales tax on the manufacturer's sale price.

Customs duties. Most goods imported into Canada are subject to customs duties at various rates as provided by tariff schedules. Customs duties which once were the chief source of revenue for the country have declined in importance as a source of revenue to the point where they now provide less than 10% of the total. Quite apart from its revenue aspects, however, the tariff still occupies an important place as an instrument of economic policy.

The Canadian Tariff consists mainly of four sets of rates, namely, General Preferential, British Preferential, Most-Favoured-Nation and General. The General Preferential rates apply to goods imported from designated developing countries. The British Preferential rates are applied to imported commodities shipped directly to Canada from countries within the British Commonwealth. Rates lower than the British Preferential are applied on certain goods imported from designated Commonwealth countries.

The Most-Favoured-Nation rates apply to goods from countries that have been accorded tariff treatment more favourable than the General Tariff but which are not entitled to the British or General Preferential Tariffs. Canada has Most-Favoured-Nation arrangements with almost every country outside the Commonwealth. The most important of these is the General Agreement on Tariffs and Trade.

The General Tariff applies to imports from countries not entitled to the British Preferential, General Preferential, or Most-Favoured-Nation treatment. Few countries are in this category and they are not significant in terms of trade coverage.

In all cases where the tariff applies there are provisions for drawbacks of duty on imports of materials used in the manufacture of products later exported. The purpose of these drawbacks of duty is to assist Canadian manufacturers to compete with foreign manufacturers of similar goods. There is a second class of drawbacks known as "home consumption" drawbacks. These apply to imported articles used in the production of specified classes of goods manufactured for home consumption.

The tariff schedules are too lengthy and complicated to be summarized here but the rates which apply on any particular product may be obtained from the Department of National Revenue which is responsible for administering the Customs Tariff.

20.6.2 Provincial taxes

All of Canada's 10 provinces levy a wide variety of taxes, fees, licences and other forms of impositions within their respective territory. Among such levies, a relatively small number account for about 75% of total provincial revenue from own sources. Only the more important levies are briefly described here. Complete details may be found in *Principal taxes and rates*, Statistics Canada Catalogue No. 68-201.

Personal income tax. All provincial governments levy a tax on the income of individuals who reside within their boundaries and on the income earned by non-residents from sources within their boundaries. Rates of provincial individual income taxes are expressed as percentages of "basic federal tax", with the exception of Quebec which has its own system. "Basic federal tax" on which provinces apply their rates is after the dividend tax credit but before any foreign tax credit and special federal tax reductions. There was little change in provincial rates from 1972 to 1973. Provincial rates at the end of 1974 were as follows: Newfoundland, 40%; Prince Edward Island, 36%; Nova Scotia, 38.5%; New Brunswick, 41.5%; Ontario, 30.5%; Manitoba, 42.5%; Saskatchewan, 40%; Alberta, 36%; and British Columbia, 30.5%. Income tax is collected by the federal government for all these provinces.

In Quebec, provincial individual income tax is not related to basic federal tax but is levied at graduated rates that progress from 10% on the first \$2,000 of taxable income to a maximum of 28% on income exceeding \$60,000. The determination of taxable income for Quebec tax is based on exemptions and deductions which, with the exception of deductions for dependent children under age 16, are similar to those for federal tax. Instead of the income tax exemption for children under 16 years of age, Quebec pays a supplementary family allowance benefit which increases from \$30 a year for the first child to a maximum amount of \$70 when the number of children exceeds five. Quebec taxpayers who have married status for tax purposes pay no provincial income tax unless their net income exceeds \$5,200; for all other taxpayers, net income must not exceed \$2,600 to be tax exempt. In addition, for married and single taxpayers whose income is between \$5,200 and \$5,785, and \$2,600 and \$2,850, respectively, the amount of tax payable cannot be more than 50% of the difference between their net income and the amount of their exemptions. The government of Quebec collects its own personal income tax.

Both Ontario and Manitoba have introduced tax credit schemes which are administered, at a small fee, through the tax collection machinery of the federal Department of National Revenue. These plans are designed to alleviate the burden of certain other taxes or of specified categories of taxpayers by means of an income tax credit or rebate. Ontario's scheme encompasses income tax for persons aged 65 and over, the general sales tax and the municipal property tax. The total amount of the income tax credit to which a taxpayer is entitled is related to his income. The maximum reduction that can be claimed was established at \$500 in 1974. The Manitoba tax credit scheme includes a reduction in income tax supplementing the federal adjustment for increases in the cost of living, and a property tax credit which varies between \$100 and \$200 in respect of owner-occupied dwellings and rented premises.

Corporation income tax. All provinces levy a tax on the taxable income of corporations derived from activities carried out within their boundaries. In all provinces except Ontario and Quebec, the provincial tax imposed on taxable income in the province is determined on the same basis as for federal income tax. In Ontario and Quebec, the determination of taxable

income for purposes of provincial tax follows closely the federal rules. Seven of the 10 provinces levy corporate income taxes at rates in excess of the 10% abatement allowed by the federal government. The rate that applies in Alberta is 11%; in British Columbia, Saskatchewan, Ontario and Quebec, 12%; and in Newfoundland and Manitoba, 13%. All provinces except Ontario and Quebec have signed agreements for the collection of the corporation income taxes by the federal government.

Succession duties. The provinces of Quebec, Ontario and British Columbia have been imposing and collecting succession duties for a long period of time, and began to levy a gift tax in 1972 when the federal government withdrew from the estate and gift tax fields. Since the latter were shared with the provinces, whether or not they themselves levied succession duties, the federal withdrawal from these fields of taxation meant a potential loss of revenue to provinces without succession duties. For such provinces the federal government agreed to collect for three years any succession duties and gift taxes they might wish to levy.

Quebec, Ontario and British Columbia maintained their own systems, but the two latter provinces chose to have their gift tax collected by the federal government. Of the remaining provinces, with the exception of Alberta which has no succession duties or gift taxes, only Manitoba and Saskatchewan are still levying succession duties and gift taxes in 1974, for which the federal government is the collecting agent. The other four provinces which had enacted succession duty and gift legislation in 1972, rescinded their related statutes in 1973 or in the spring of 1974.

Provincial succession duties consist of levies on the value of the inheritance left by a deceased person. Two rates are normally applied: one which increases in relation to the total value of the estate, and one which varies according to the value of the inheritance received by each heir. Basic abatements and exemptions take into account the degrees of affinity of the heirs to the deceased.

Hospitalization and medical care insurance premiums. Three provinces and one territory were still levying premiums in 1974 and one province a payroll tax and a special income tax toward financing the provincial share of their hospitalization and medical care programs. In the other provinces, the provincial share of these programs is financed through their general revenue funds. Ontario has combined hospitalization and medical care insurance premiums into monthly rates of \$11.00 for single persons and \$22.00 for a family. No premiums are paid by welfare recipients or by persons 65 years of age and over. In Alberta, hospitalization and medical care annual premiums are combined and are set at \$69.00 for single persons and \$138.00 for families. Persons aged 65 and over do not pay premiums nor do welfare recipients or residents with no taxable income. Only the medical care program is financed through premiums in British Columbia at a monthly rate of \$5.00 for single persons, \$10.00 for a family of two and \$12.50 for a family of more than two persons. The province subsidizes 90% of the premiums of persons with no taxable income and 50% for persons with a taxable income not in excess of \$1,000 in the previous year. In the Yukon Territory, medical care premiums are on a monthly basis as follows: \$5.00 for single persons, \$10.00 for a family of two and \$12.50 for a family of more than two persons. The Yukon Territory subsidizes 100% of the premiums of persons with no taxable income, 50% of the premiums of single persons with taxable income of less than \$500, of families of two persons with taxable income of less than \$1,000 and of families comprising more than two persons with taxable income less than \$1,300. Quebec finances its medical care program through a payroll tax at a rate of eight tenths of 1% of gross salaries paid by employers and through a special income tax of eight tenths of 1% on the net income of individuals. In the latter case, the maximum annual amount is \$125, if at least three quarters of the net income is made up of salaries; in other cases the maximum payable is \$200. The hospitalization program is financed through the province's general revenue fund.

Retail sales taxes. Retail sales taxes are levied on the final purchaser or user and are collected by the retailer. All provinces except Alberta levy this type of tax at rates as follows: Nova Scotia, 7%; Newfoundland, Prince Edward Island, New Brunswick and Quebec, 8%; Manitoba, Saskatchewan and British Columbia, 5%. Ontario has a dual rate structure: 7% (5% from April 8 to December 31, 1975) is charged on most taxable items; 10% on amusement, meals over \$4, beer and spirits. These levies apply to tangible taxable commodities sold, with varying exemptions, for consumption in the province and to a few selected services, for

example: to telephone services in all provinces; in Quebec, to telecommunications, in Prince Edward Island, to laundry and dry-cleaning services, to accommodations, and to labour costs of repairs and installations; in New Brunswick, to telecommunications, to meals, hotel and motel charges and to laundry and dry-cleaning charges; and in Manitoba, to a broad range of services including cleaning, furniture repairs, motel accommodation, etc. The sales taxes do not apply to goods sold for delivery in other provinces or to exported commodities. All provinces imposing sales taxes provide comprehensive exemptions for foodstuffs and drugs; in Quebec and New Brunswick, pharmaceutical products are exempt only when sold on prescription. In British Columbia a 5% levy on accommodations is made under the Hotel and Motel Room Tax Act and 8% in Quebec under the Meals and Hotels Tax Act.

Amusement taxes and race track taxes. Each of the provinces with the exception of Newfoundland, Alberta, Saskatchewan and British Columbia has a tax on admission to places of entertainment. In Quebec, this tax is collected by the municipalities which retain the proceeds. The tax on admissions is 10% or 11%. In addition, all provinces either under the same statutory authority or separate statutes tax money wagered on horse races. The rates of taxation are as follows: Newfoundland, Nova Scotia and New Brunswick, 11%; Prince Edward Island, 11.5%; Manitoba and Saskatchewan, 10%; Alberta, 5%; Quebec, 7% on ordinary pools and 9% on special pools; Ontario, 7% (a tax of 7% is also levied on the amount gained from a winning ticket). In British Columbia the tax is 8% of which 1% is earmarked to increase the racing purses for horses bred, born and raised in British Columbia.

Gasoline and diesel fuel oil taxes. Each of the 10 provinces imposes a tax on the purchase of gasoline by motorists and truckers. The rates vary from 10 cents a gallon in Alberta to 25 cents in Newfoundland. The amount of tax borne by one gallon of gasoline and diesel fuel, respectively, in each province is: Newfoundland 25 cents, 25 cents; Prince Edward Island 21 cents, 25 cents; Nova Scotia 21 cents, 27 cents; New Brunswick 20 cents, 23 cents; Quebec 19 cents, 25 cents; Ontario 19 cents, 25 cents; Manitoba 15 cents, 18 cents; Saskatchewan 12 cents, 16 cents; Alberta 10 cents, 12 cents; British Columbia 15 cents, 17 cents.

A number of activities are exempt or partially exempt from motive fuel taxation. Generally speaking, these pertain to gasoline and diesel fuel used by producers of primary products, commercial fishermen and municipal governments.

Motor vehicle licences and fees. Each province levies a fee on the annual registration of motor vehicles, which is compulsory. Upon registration, a vehicle is issued with licence plates. The rates of fee vary from province to province and, in the case of passenger cars, may be assessed on the weight of the vehicle, the wheel base, the year of manufacture, the number of cylinders of the engine, or at a flat rate. The fees for commercial motor vehicles and trailers are based on the gross weight for which the vehicle is registered, i.e. the weight of the vehicle empty plus the load it is permitted to carry. Every operator or driver of a motor vehicle is required to register periodically and pay a fee for a driver's licence. The licences are valid for periods of from one to five years and the fees vary from \$1 to \$7 a year.

Taxes and royalties on mining, oil and natural gas production. All provinces except Prince Edward Island levy taxes or royalties on the net income from mining operations and petroleum and natural gas production. Newfoundland, Manitoba, Saskatchewan, Alberta and British Columbia also impose a tax on the assessed value of minerals.

Mining operations in Newfoundland, with the exception of iron ore which is taxed separately, are subject to a tax of 5% on net income. Nova Scotia places specific taxes on income derived from various levels of mining production. The tax levied by New Brunswick ranges from 8% to 12% on the profits of mining companies. Quebec imposes a tax ranging from 9% to 15% on the net profits of mining companies in excess of \$50,000. Ontario's tax on the profits of mining companies varies from 0% on the first \$100,000 to 40% on profits over \$40 million. Manitoba imposes a flat rate of 23% if mining profits exceed \$50,000; for lesser profits the tax is 6%. Saskatchewan levies a tax ranging from 5.0% to 12.5% on the net profit of mining companies (metallic metal and uranium). British Columbia's rate of mining taxation is 2.5% of the value of designated minerals sold, disposed of, or used by a producer.

Saskatchewan, Alberta and British Columbia impose substantial royalties on oil (both crude and synthetic), natural gas and its by-products, and a number of other minerals of lesser importance.

Tax on logging operations. Quebec and British Columbia levy a tax on income from logging operations of individuals, partnerships, associations or corporations. In these two provinces the rate of taxation is 10% on net income in excess of \$10,000 (if the net income is greater than \$10,000 the whole amount is taxable with no basic exemption). In Quebec, 33.3% and in British Columbia, 20% of the tax is allowed as a deduction from provincial corporation income tax or, in Quebec, from the provincial income tax. For both provinces, 66.7% of the provincial tax is deductible from federal income tax.

Business taxes. Quebec, Ontario and British Columbia are the only provinces to impose a tax on paid-up or utilized capital of corporations which operate within their boundaries. The rate for Quebec and Ontario is one fifth of 1% while British Columbia's is one tenth of 1%.

Quebec has a place-of-business tax which is generally \$50 but is reduced to \$25 when the paid-up capital is less than \$25,000; in the case of loan companies, the tax is one twentieth of 1% on paid-up capital stock and moneys invested in Quebec, with a minimum amount of \$100. Quebec also levies special taxes on certain kinds of companies such as banks, railway, express, trust, sleeping-car, parlour-car and dining-car companies.

Prince Edward Island charges special annual licence fees to most insurance companies, banks, acceptance companies, chain theatres and chain stores, steamship companies, telephone, telegraph and electric light companies and brokers, as well as nominal licence fees to unincorporated companies, the latter being similar to filing fees in other provinces.

Land transfer taxes. Ontario levies a tax based on the price at which ownership of land is transferred. The tax for Canadian residents is three tenths of 1% on the purchase up to \$35,000 and six tenths of 1% on anything in excess of that amount; for non-residents the tax is 20% of the purchase price. In addition, Ontario levies a tax of 50% on the increase in value (between April 9, 1974 and the date of sale) on the sale of designated land (all real property except Canadian resource property). In Alberta, the fee imposed for the transfer of land is one fifth of 1% of the value of the land transferred up to \$5,000, and one tenth of 1% on the additional value when it exceeds \$5,000. British Columbia and Saskatchewan do not have a land transfer tax but have an equivalent in land title fee which is based on land value.

Tax on premium income of insurance companies. As at January 1, 1974, all 10 provinces impose a tax on the premium income of insurance companies. Ontario imposes a tax of 2.5% on the premium income from insurance covering property, fire, inland transport, livestock, plate glass, sprinkler leakage, theft and weather. Premium income from other insurance is taxed at the rate of 2%. British Columbia levies a tax of 2% on gross premiums and 5% on the premiums paid to unlicensed insurers or reciprocal exchanges. All the other provinces tax premium income at the rate of 2%.

Provincial property taxes. Provincial property taxes are levied by New Brunswick at the rate of 1.5% of fair market value on all land and buildings in the province; the same rate of tax is also imposed on business. Prince Edward Island has in operation a program somewhat similar to that of New Brunswick. A tax of 1% is imposed on the fair market value of all real property in the province; a further 1% is assessed against the fair market value of business property. Ontario imposes a property tax of 1.5% of assessed value with a minimum tax of \$6 in respect of any land in unorganized (non-municipal) areas. British Columbia also imposes a property tax in unorganized (non-municipal) areas at varying rates ranging from one half of 1% of the assessed value of farm land to 7% for (operating) coal land. Yukon Territory levies a property tax on the fair value of all real property (non-municipal) at a rate determined each year.

20.6.3 Local taxes

For purposes of financial statistics local governments can be classified into three principal categories — municipalities, local school authorities and special purpose authorities. Consequently, local taxes described below are levied by either one of these entities or by all of them depending upon the taxing powers granted to each of them by their respective provincial legislatures. For more than a century, the main source of revenue of local governments has been related to real properties within their jurisdictions. Various taxes have been gradually implemented to supplement the real property tax from which, however, they still derive the bulk of their revenue.

Local property tax. Municipalities throughout Canada levy taxes on real properties situated within their boundaries. Generally speaking, they set the rates and collect the proceeds of their own levy or, in addition, on behalf of other local governments in their area, particularly local school authorities. However, in most of Quebec, outside the Montreal area, and in the unorganized parts of Ontario, school boards levy and collect their own real property taxes.

The real property tax rate is generally expressed in mills (rate per \$1,000 of the base) or as a rate per \$100 of the base. This base is the assessed value of each property. Methods of determining assessed value vary widely not only among the provinces but also among municipalities within a province. However, for taxation purposes, it is generally referred to as "fair market value" which is considered to be a percentage of "actual market value".

Business taxes. Among other taxes that municipalities levy, business taxes rank next to the real property tax as a producer of municipal revenue. Such taxes are levied directly on the tenant or the operator of a business. The bases on which business taxes are levied are very diversified among the provinces. The most common in use are: a percentage of the assessed value of real property, value of stock-in-trade, the assessed annual rental value of immovables and the area of premises occupied for business purposes.

Water charges. In general, municipalities recoup all, or part, of the cost of supplying water through special charges for water consumption. Such charges take various forms, such as, for example, a water tax based on the rental value of the property occupied, or a charge based on the actual consumption of water.

Sources

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- 20.2.2 Operations Research and Statistics Division, Systems and Planning Branch, Department of National Revenue, Taxation; Business Finance Division, General Statistics Branch, Statistics Canada.
- 20.2.3 - 20.2.4 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 20.3 Federal-Provincial Relations Division, Department of Finance.
- 20.4 - 20.5 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 20.6 - 20.6.1 Personal, Commodity and Estate Taxes Division, Department of Finance.
- 20.6.2 - 20.6.3 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

20.1 Consolidated government revenue and expenditure, after elimination of intergovernment transfers, 1968-72 (million dollars)

Source or function	1968 ¹	1969 ¹	1970	1971	1972
Gross general revenue by source					
Income tax					
Individuals	6,098.7	7,730.6	9,147.7	10,194.5	12,007.3
Corporations	2,873.4	3,700.7	3,189.4	3,181.4	3,897.5
General sales tax	3,493.8	3,973.6	4,071.6	4,664.3	5,384.9
Real and personal property tax	2,531.4	2,828.9	3,301.0	3,424.4	3,707.8
Other tax revenue	5,932.1	6,654.7	6,970.3	7,500.1	8,153.5
Non-tax revenue	4,153.9	4,775.6	5,457.9	6,409.6	7,440.0
Total	25,083.4	29,664.1	32,137.9	35,374.3	40,591.1
Gross general expenditure by function					
Education	4,713.6	5,403.3	5,993.0	6,538.0	6,953.0
Social welfare	4,229.4	4,739.0	5,398.6	6,545.4	8,188.2
Health	2,665.3	3,439.8	4,224.0	4,842.7	5,478.0
Debt charges (excluding debt retirement)	2,053.5	2,291.0	2,617.7	3,069.4	3,374.9
Transportation and communications	2,870.0	2,997.5	3,246.6	3,683.0	4,084.2
Defence	1,797.0	1,814.7	1,724.5	1,871.6	1,911.7
Natural resources and primary industries	1,084.8	1,308.9	1,132.7	1,314.1	1,537.1
Veterans' pensions and other benefits	427.9	424.3	409.0	422.4	477.4
Contributions to own government enterprises	264.1	303.5	307.6	335.4	357.6
Other expenditure	4,648.5	5,263.3	6,386.7	7,653.5	8,646.5
Total	24,754.1	27,985.3	31,440.4	36,275.5	41,008.6
Gross general revenue less gross general expenditure	+329.3	+1,678.8	+697.5	-901.2	-417.6

¹A preliminary revision of the data has been effected for 1968 and 1969 to put the data on a more comparable basis with the following years.

20.2 Gross general revenue of the federal government, years ended Mar. 31, 1972 and 1973 (million dollars)

Source	1972	1973
Taxes		
Income		
Individuals	7,227	8,378
Corporations	2,396	2,919
On certain payments or credits to non-residents	288	292
General sales	2,653	3,052
Alcoholic beverages	398	426
Tobacco	547	565
Other commodities and services	46	44
Customs duties	989	1,182
Estate taxes	132	61
Social insurance levies ¹	571	742
Universal pension plan levies ²	826	879
Other	4	1
Total, taxes	16,077	18,541
Natural resources	8	11
Privileges, licences and permits	21	22
Sales of goods and services	552	699
Return on investments	1,165	1,329
Contributions to non-trusted public service pension plans	185	221
Postal receipts	487	558
Bullion and coinage	24	24
Fines and penalties	12	14
Miscellaneous	11	7
Total, gross general revenue from own sources	18,542	21,426
Specific purpose transfers from other levels of government	8	—
Total, gross general revenue	18,550	21,426

¹Unemployment insurance.

²Canada Pension Plan.

20.3 Gross general expenditure of the federal government, years ended Mar. 31, 1972 and 1973 (million dollars)

Function	1972	1973
General government	1,110	1,388
Protection of persons and property ¹	2,213	2,299
Transportation and communications ²	1,207	1,370
Health	1,603	1,789
Hospital care	847	963
Other	756	826
Social welfare	5,418	6,727
Universal pension plans	144	207
Old age security	2,205	2,524
Veterans' benefits	422	477
Unemployment insurance	1,205	2,171
Family and youth allowances	616	610
Assistance to disabled, handicapped, unemployed and other needy persons	630	638
Other	196	100
Education	864	847
Natural resources	277	334
Agriculture, trade and industry, and tourism	897	1,015
Environment	23	100
Recreation and culture	164	215
Labour, employment and immigration	289	489
Housing	70	99
Foreign affairs and international assistance	312	385
Supervision and development of regions and localities	142	140
Research establishments	331	278
General purpose transfers to other levels of government	1,546	1,640
Transfers to own enterprises	272	294
Debt charges	1,423	1,502
Other	57	1
Total, gross general expenditure	18,218	20,912

¹Includes National Defence.²Includes Post Office.

20.4 Transfers by the federal government to provincial governments, territories and local governments, year ended Mar. 31, 1973 (thousand dollars)

Year, payee and purpose	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	All provinces	YT	NWT	Canada
PROVINCIAL GOVERNMENTS AND TERRITORIES														
General purpose transfers	9,708	659	2,174	1,774	4,484	5,504	2,142	2,116	3,073	2,117	33,751	—	—	33,751
Statutory subsidies	—	—	—	—	—	7,870	1,536	1,105	913	—	12,430	—	—	12,430
Federal estate tax	-417	224	391	-23	831	—	—	—	—	—	—	—	—	—
Federal corporation income tax on	3,321	1,489	3,666	—	12,081	36,029	1,111	120	18,894	3,334	80,045	729	157	80,931
Federally owned public utilities	114,447	146,763	25,092	125,238	462,434	—	89,816	173,582	—	—	1,137,372	—	—	1,137,372
Equalization Programs (Interim Arrangements)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Act	—	—	—	—	236,891	—	—	—	—	—	236,891	—	—	236,891
Grants in lieu of taxes	—	—	—	2,450	—	—	—	—	—	729	3,179	—	—	3,179
Other	—	—	—	400	—	—	—	—	—	—	400	13,229	61,372	75,001
Total, general purpose transfers	127,059	149,135	31,323	129,839	716,721	49,403	94,605	176,923	22,880	6,180	1,504,068	13,958	61,529	1,579,555
Specific purpose transfers														
General government	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	83	20	138	42	831	1,072	139	131	226	300	2,982	622	1,727	2,349
Protection of persons and property	—	—	—	—	—	—	—	—	—	—	—	11	29	3,022
Courts of law	83	20	138	42	831	1,072	139	131	226	300	2,982	11	11	22
Other (civil emergency measures)	5,159	72	9,231	10,014	10,135	4,886	181	133	117	146	40,074	—	18	3,000
Transportation and communications	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Road	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Railway Grade Crossing Fund	636	72	9,230	172	2,918	1,819	181	133	117	146	6,195	—	—	6,195
Other	4,523	—	—	9,796	4,217	67	—	—	—	—	27,833	—	—	27,833
Water	—	—	—	—	3,000	3,000	—	—	—	—	6,000	—	—	6,000
Other	—	—	—	46	—	—	—	—	—	—	46	—	—	46
Health	30,594	6,238	47,154	39,293	—	485,046	64,445	55,194	105,803	123,311	957,078	1,006	3,925	962,009
Hospital insurance and diagnostic services	30,594	6,238	47,154	39,293	—	485,046	64,445	55,194	105,803	123,311	957,078	932	2,510	960,520
Hospital care	—	—	—	—	—	—	—	—	—	—	—	74	1,415	1,489
Medical care	21,162	3,266	23,326	19,131	175,948	240,321	35,107	29,445	53,120	65,317	666,143	606	1,366	668,115
Health Resources Fund	5,880	60	771	642	727	15,346	4,926	2,818	5,116	607	36,893	—	107	37,000
Medical Care Act	15,282	3,206	22,555	18,489	175,221	224,975	30,181	26,627	48,004	64,710	629,250	486	1,067	630,803
Medicare — Indians and Inuit	—	—	—	—	—	—	—	—	—	—	—	120	192	312
Preventive services	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Public health research	45	—	386	95	1,489	1,224	553	289	207	492	4,780	—	19	4,799
Other	59	21	85	71	588	805	103	99	165	160	2,156	—	—	2,156
Professional training	51,860	9,525	70,951	58,590	178,025	727,396	100,208	85,027	159,295	189,280	1,630,157	1,612	5,310	1,637,079
Total, health	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Social welfare														
Assistance to disabled, handicapped, unemployed and other needy individuals	26,302	4,452	22,896	24,241	520	214,956	37,058	29,937	54,660	71,752	486,774	695	942	488,411
Old age assistance	-11	—	-3	-2	15	-19	-4	-3	-6	-1	-34	—	-1	-35
Disabled persons' allowances	79	22	409	1,049	—	4,341	775	812	1,438	1,496	10,421	2	16	10,439
Blind persons' allowances	218	32	295	250	—	37	83	25	130	278	1,348	3	19	1,370
Canada Assistance Plan	26,016	4,398	22,195	22,944	505	210,597	36,204	29,103	53,098	69,979	475,039	690	908	476,637
Other	874	1	4	13	—	3,752	178	64	147	9	5,042	—	—	5,042
Total, social welfare	27,176	4,453	22,900	24,254	520	218,708	37,236	30,001	54,807	71,761	491,816	695	942	493,453

20.4 Transfers by the federal government to provincial governments, territories and local governments, year ended Mar. 31, 1973 (thousand dollars) (continued)

Year, payee and purpose	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	All provinces	YT	NWT	Canada
Education											1,026	—	—	1,026
Indian and Inuit schools										1,026	490,568	—	—	490,568
Post-secondary	6,219	1,365	17,054	8,047	188,888	161,739	19,987	14,221	53,760	19,288	—	—	—	—
Capital assistance in providing training facilities (Adult Occupational Training Act)						5	11		15		21	—	—	21
Post-secondary education	6,219	1,365	17,054	8,047	179,439	161,744	19,976	14,221	53,745	19,288	481,098	—	—	481,098
Canada Student Loans Act	224	228	954	5,881	9,449	18,951	1,195	773	1,058	845	67,019	—	—	67,019
Other	6,443	1,593	18,008	13,928	225,798	180,690	21,182	14,994	54,818	21,159	558,613	—	—	558,613
Total, education														
Natural resources														
Fish and game														
Assistance in construction of fishing vessels	2,110	118	261	467	202	61	30	—	—	951	4,200	—	—	4,200
Forests	331	—	—	—	—	—	—	—	—	—	331	—	—	331
Inventory of forest reserves	612	—	—	4,475	—	—	—	—	—	—	5,087	—	—	5,087
Mines	—	—	—	—	—	1,039	—	—	—	3,840	4,879	—	—	4,879
Water power	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total, natural resources	3,053	118	261	4,942	202	1,100	30	—	—	4,791	14,497	—	—	14,497
Agriculture, trade and industry, and tourism														
Agriculture	710	15,425	2,868	5,816	37,598	7,790	7,415	2,055	8,515	1,679	89,871	—	—	89,871
Assistance in construction of livestock shipments to the Royal Winter Fair	320	—	2,290	321	5,758	6,825	2,060	530	908	782	19,794	—	—	19,794
Agricultural and Rural Development Act	268	2	496	803	—	—	—	—	—	—	1,569	—	—	1,569
Land surveying and mapping	15,355	—	—	4,431	30,000	—	4,024	—	—	—	53,810	—	—	53,810
Rural area development	75	—	—	—	737	5	237	224	133	631	2,042	—	—	2,042
Canada Land Inventory	4	3	9	3	24	68	15	21	19	9	175	—	—	175
4-H Clubs	—	—	—	—	9	47	—	2	1	—	59	—	—	59
Rabies control	—	—	—	—	—	784	1,026	1,004	956	257	5,214	—	—	5,214
Crop insurance	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Assistance re livestock shipments to the Royal Winter Fair	—	—	—	—	—	61	—	—	—	—	61	—	—	61
Research	43	—	21	258	—	—	—	—	43	—	365	—	—	365
Irrigation rehabilitation	—	—	—	—	—	—	—	—	6,200	—	6,200	—	—	6,200
Waterfowl crop depredation	—	—	—	—	10	—	53	274	255	—	582	—	—	582
Trade and industry	—	8	9	40	147	173	32	31	—	130	—	—	—	130
Tourism	40	29	36	—	—	—	19	26	12	10	492	—	—	492
Total, agriculture, trade and industry, and tourism	750	15,462	2,913	5,856	37,755	7,963	7,466	2,112	8,527	1,689	90,493	—	—	90,493
Environment														
Water purification and supply	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreation and culture	69	1,498	93	84	—	—	364	—	—	—	2,108	50	2	2,223
Recreational facilities	—	—	—	—	—	—	364	—	—	—	364	—	—	364
Other	69	1,498	93	84	—	—	—	—	—	—	1,744	50	65	1,859
Labour, employment and immigration	—	239	1,127	973	64	274	1,571	2,524	1,474	2,012	10,258	56	2	10,316
Labour and employment	—	236	1,117	966	22	217	1,562	2,511	1,457	1,993	10,081	55	—	10,136
Immigration	—	—	—	—	—	24	24	—	—	—	24	—	—	24
Other	—	3	10	7	42	33	9	13	17	19	153	1	2	156

20.4 Transfers by the federal government to provincial governments, territories and local governments, year ended Mar. 31, 1973 (thousand dollars) (concluded)

Item	1972	1973	Item	1972	1973
Assets			Liabilities		
Cash on hand or on deposit	1,903	2,428	Payables	7,095	8,375
Receivables	334	373	Loans and advances	370	370
Loans and advances	20,101	21,623	Treasury bills	3,830	4,290
Investments	11,693	13,491	Canada Savings Bonds	9,712	10,989
Other assets	818	997	Other bonds	13,716	13,759
Total, assets	34,849	38,912	Other liabilities	4,928	5,369
			Total, liabilities	39,651	43,152

Item		1972	1973
Bonded debt	\$'000	23,428,500	24,748,493
Average interest rate	%	6.21	6.39
Average term of issue	yr	11.49	11.39
Place of payment			
Canada	\$'000	23,093,112	24,414,834
New York	"	261,544	259,815
Federal Republic of Germany	"	73,844	73,844

Item	1972		1973	
	Amount of guarantee	Amount outstanding as at Mar. 31, 1972	Amount of guarantee	Amount outstanding as at Mar. 31, 1973
Railway securities guaranteed as to principal and interest				
Canadian National 3¼% due Feb. 1, 1974	200,000	200,000	200,000	200,000
Canadian National 2¼% due June 15, 1975, US\$6,000,000 ^a	6,000	6,000	6,000	6,000
Canadian National 5% due May 15, 1977	77,077	77,077	75,706	75,706
Canadian National 4% due Feb. 1, 1981	300,000	300,000	300,000	300,000
Canadian National 5¼% due Jan. 1, 1985	89,980	89,980	87,977	87,977
Canadian National 5% due Oct. 1, 1987	143,255	143,255	139,849	139,849
Grand Trunk Western Railroad Company	5,400	5,400	5,400	5,400
Total, railway securities	821,712	821,712	814,932	814,932
Other outstanding guarantees and contingent liabilities				
Loans made by lenders under Part IV of the National Housing Act, 1954 for home extension and improvements	30,000 ^a	22,839 ^a	30,000 ^a	23,458 ^a
Insured loans made by approved lenders under the National Housing Act 1954	16,000,000 ^{a,4}	9,225,000 ^{a,4}	16,000,000 ^{a,5}	10,056,000 ^{a,5}
Liability for insurance and guarantees under the Export Development Act	1,150,000	615,191	1,150,000	655,605
Loans made by chartered banks under the Farm Improvement Loans Act	204,114	83,034	1,068,570	272,061
Loans made by chartered banks and credit unions under the Fisheries Improvement Loans Act	3,700	2,583	11,442	2,359
Loans made by chartered banks under the Small Businesses Loans Act	34,588	17,863	58,101	20,664
Loans made by chartered banks and credit unions under the Canada Student Loans Act ⁶	535,637	485,237	398,000	398,000
Loans made by chartered banks to the Canadian Wheat Board	725,000	327,048	800,000	436,454
Loans made by lenders under the Regional Development Incentives Act and the Regional Economic Expansion Act	1,652	1,652	1,025	1,025
Loans made by lenders under the Cape Breton Development Act	100,000	30,000	30,000	28,500
Loans made by lenders under the General Adjustment Assistance Program	250,000	17,199	250,000	24,905
Total, guaranteed debt	19,856,403	11,649,358	20,612,070	12,733,963
Loans made by approved lending institutions under National Housing Act prior to 1954	Unstated	Indeterminate	Unstated	Indeterminate
Guarantees to owners of returns from moderate rental housing projects	Unstated ⁷	Indeterminate ⁷	Unstated ⁸	Indeterminate ⁸

purpose of settling claims. In 1972, rental contracts totalled \$3,301,000.

20.8 Summary of the public debt and interest payments thereon, years ended Mar. 31, 1969-73

Year ended Mar. 31	Gross debt \$ '000,000	Net active assets \$ '000,000	Net debt \$ '000,000	Net debt per capita ¹ \$	Increase or decrease in net debt during year \$ '000,000	Interest paid on debt \$ '000,000	Interest paid per capita ² \$
1969	35,919	18,583	17,336	823.13	+576	1,443	69.54
1970	38,150	21,207	16,943	792.59	-393	1,676	79.57
1971	42,976	25,653	17,322	798.97	+379	1,780	83.25
1972	47,687 [†]	29,750 [†]	17,937	831.63	+615	1,964	89.95
1973	51,718	34,262	17,456	790.04	-481	2,105	96.43

¹Based on the official estimates of population for June 1 of the year indicated.²Based on the official estimates of population for June 1 of the year immediately preceding the one indicated.**20.9 Revenue collected (net of refunds) by the Department of National Revenue, Taxation, years ended Mar. 31, 1970-74 (thousand dollars)**

Year ended Mar. 31	Income tax ¹ Individual ²	Corporation	Special refundable tax	Total	Estate tax and succession duties ³	Total collections
1970	7,910,444	3,080,001	-102,658	10,887,787	100,631	10,988,418
1971	9,097,603	2,653,286	-35,083	11,715,806	119,835	11,835,641
1972	10,372,651	2,664,602	-1,699	13,035,554	132,016	13,167,570
1973	12,421,913	3,287,807	-840	15,708,880	71,594	15,780,474
1974	13,967,315	4,087,710	-396	18,054,629	39,117	18,093,746

¹Includes transfers to Old Age Security Fund.²Includes non-resident withholding tax and Canada Pension Plan contributions by employers, employees and self-employed persons; includes social development tax 1970-73; includes unemployment insurance premiums 1972-74.³Includes federal estate taxes as well as succession duties and gift taxes collected on behalf of certain provinces.**20.10 Number of taxpayers and amounts of income and tax, by selected cities, 1971 and 1972**

City and province	1971			1972		
	Taxpayers	Total income assessed \$ '000,000	Federal tax payable ¹ \$ '000,000	Taxpayers	Total income assessed \$ '000,000	Federal tax payable \$ '000,000
Brantford, Ont.	29,241	206.0	27.1	31,316	237.2	30.9
Calgary, Alta.	166,057	1,265.9	174.1	179,529	1,490.5	204.2
Dartmouth, NS	22,313	158.2	19.9	27,237	216.3	26.9
Edmonton, Alta.	188,406	1,411.2	193.1	209,721	1,683.7	225.8
Guelph, Ont.	26,189	191.3	25.6	29,251	230.0	30.0
Halifax, NS	51,354	369.7	49.2	59,296	467.9	61.3
Hamilton, Ont.	190,210	1,487.8	207.2	201,093	1,718.4	240.4
Hull, Que.	44,022	316.2	31.8	49,173	371.0	36.8
Kingston, Ont.	33,465	252.6	35.0	36,135	298.7	41.2
Kitchener—Waterloo, Ont.	80,727	592.3	80.4	80,502	634.2	85.4
London, Ont.	99,141	760.2	105.7	106,382	866.4	118.6
Moncton, NB	23,447	155.7	18.6	25,567	176.0	20.8
Montreal, Que.	806,025	5,963.6	623.1	855,125	6,744.6	692.2
New Westminster, BC	19,484	150.5	21.1	23,913	192.5	26.4
Niagara Falls, Ont.	24,253	176.9	22.9	27,129	212.5	27.2
Oakville, Ont.	25,038	226.9	34.3	25,852	257.0	39.4
Oshawa, Ont.	36,067	294.4	41.0	37,665	330.2	46.2
Ottawa, Ont.	182,971	1,529.9	221.6	201,522	1,849.6	270.5
Peterborough, Ont.	26,507	195.8	25.9	27,387	217.4	28.1
Quebec, Que.	140,554	1,018.9	104.2	154,413	1,215.5	122.7
Regina, Sask.	53,315	368.7	46.7	57,237	424.3	53.8
Saint John, NB	30,899	204.7	25.0	32,518	230.4	27.5
St. Catharines, Ont.	47,746	374.9	51.2	50,886	420.8	56.4
St. John's, Nfld.	37,823	257.3	32.4	40,026	291.4	36.8
Sarnia, Ont.	27,921	241.4	33.7	30,356	276.1	38.9
Saskatoon, Sask.	46,269	318.8	39.7	48,506	356.8	43.2
Sault Ste Marie, Ont.	29,059	232.2	31.4	31,149	265.5	35.7
Sherbrooke, Que.	31,652	214.5	21.0	35,073	250.6	23.8
Sudbury—Copper Cliff, Ont.	54,729	449.2	63.5	53,681	471.9	65.2
Sydney—Glace Bay, NS	30,883	196.9	22.5	34,928	225.7	23.7
Thunder Bay, Ont.	44,461	333.5	44.8	46,064	373.1	49.9
Toronto, Ont.	993,366	7,816.0	1,145.0	1,063,789	9,039.9	1,320.5
Trois-Rivières, Que.	19,705	144.9	14.6	22,452	167.6	15.9
Vancouver, BC	413,007	3,191.4	443.3	439,253	3,639.4	505.1
Victoria, BC	81,882	580.0	75.2	90,664	713.4	90.8
Windsor, Ont.	85,401	695.2	92.1	95,772	852.1	115.3
Winnipeg, Man.	219,176	1,518.9	197.6	235,181	1,751.2	222.6

¹Includes Old Age Security and social development taxes.

20.11 Number of taxpayers and amounts of income and tax, by occupational class, 1971 and 1972

Occupational class	1971			1972		
	Taxpayers	Total income assessed \$'000	Federal tax payable ¹ \$'000	Taxpayers	Total income assessed \$'000	Federal tax payable \$'000
Employees	6,324,138	45,457,159	5,588,324	6,833,467	53,044,265	6,488,041
Farmers	115,384	691,006	66,613	142,456	990,689	95,922
Fishermen	10,148	58,678	5,971	16,409	106,366	11,429
Self-employed professionals						
Accountants	5,332	99,340	19,031	5,151	104,293	19,240
Medical doctors and surgeons	20,742	820,442	201,377	22,065	908,959	223,404
Dentists	5,331	137,689	29,781	5,097	144,564	31,940
Lawyers and notaries	9,707	270,452	64,005	9,300	284,609	64,762
Consulting engineers and architects	2,696	58,363	11,631	2,412	61,451	12,893
Entertainers and artists	6,214	42,025	5,206	6,458	43,426	5,261
Other professionals	14,423	156,289	25,717	15,649	198,364	34,190
Salesmen	19,734	172,982	21,966	21,028	210,363	28,462
Business proprietors	254,308	1,892,515	229,524	273,027	2,228,004	277,231
Investors	256,662	1,862,997	241,944	228,536	2,097,421	270,780
Property owners	58,073	439,396	62,792	60,854	543,134	78,536
Pensioners	256,408	1,124,461	106,422	212,457	1,143,638	97,749
All others	13,271	72,393	8,448	226,649	793,462	56,781
Total	7,372,571	53,356,187	6,688,751	8,081,015	62,903,008	7,796,621

¹Includes Old Age Security and social development taxes.

20.12 Individual income tax statistics, by income class, 1971 and 1972

Income class based on total income	Taxpayers		Total income assessed		Federal tax payable		Average federal tax	
	1971	1972	1971 \$'000	1972 \$'000	1971 ¹ \$'000	1972 \$'000	1971 ¹ \$	1972 \$
Under \$2,000	280,151	249,929	487,717	423,586	14,642	8,848	52	35
\$2,000 and under \$3,000	767,941	709,470	1,926,234	1,787,605	100,528	79,039	131	111
\$3,000 " \$5,000	1,745,633	1,805,911	6,980,969	7,252,179	580,415	528,896	332	293
\$5,000 " \$7,000	1,525,815	1,605,157	9,099,441	9,571,004	956,286	904,309	627	563
\$7,000 " \$10,000	1,694,277	1,882,082	14,157,632	15,795,024	1,723,678	1,786,616	1,017	949
\$10,000 " \$15,000	975,065	1,297,754	11,551,272	15,471,507	1,552,834	2,077,867	1,593	1,601
\$15,000 " \$25,000	289,207	406,302	5,265,925	7,408,008	849,701	1,197,436	2,938	2,947
\$25,000 " \$50,000	75,937	97,759	2,511,479	3,283,433	528,852	687,509	6,964	6,892
\$50,000 and over	18,545	24,651	1,375,517	1,910,662	381,815	526,101	20,589	21,342
Total	7,372,571	8,081,015	53,356,187	62,903,008	6,688,751	7,796,621	907	965

¹Includes Old Age Security and social development taxes.20.13 Corporations reporting positive taxable income¹, by industrial division and by asset size, 1969-71 (million dollars)

Asset size and year		Agri- cul- ture, for- estry, fishing	Mining	Manu- fac- turing	Con- struc- tion	Util- ities	Whole- sale trade	Retail trade	Fi- nance ²	Ser- vices	Total ²
Under \$100,000	1969	7.5	2.9	29.9	43.8	14.3	44.1	73.0	68.0	66.9	350.4
	1970	7.8	3.1	26.0	41.5	14.9	41.1	72.7	67.1	68.8	343.0
	1971	7.4	3.9	30.0	45.7	17.0	45.1	74.3	74.9	79.4	377.7
\$100,000-\$249,999	1969	11.8	3.3	59.6	56.6	18.8	72.6	83.5	85.8	61.4	453.3
	1970	11.9	3.0	58.3	53.1	19.7	73.3	84.3	85.4	64.4	453.3
	1971	11.9	2.8	58.7	61.0	21.2	74.6	92.7	95.0	75.5	493.3
\$250,000-\$999,999	1969	17.6	8.2	192.9	68.0	33.4	162.3	70.1	123.9	75.1	751.5
	1970	17.4	7.0	175.7	68.9	31.2	167.9	73.9	125.3	82.3	749.8
	1971	18.4	6.9	188.2	75.8	34.9	181.6	87.4	148.0	88.6	829.9
\$1,000,000-\$4,999,999	1969	4.6	14.7	466.0	56.8	66.2	178.2	50.5	98.7	50.5	986.2
	1970	5.0	14.5	430.6	53.4	69.8	181.4	45.6	93.4	53.5	947.2
	1971	5.2	16.6	470.1	83.6	74.7	232.2	65.3	116.1	68.3	1,132.1
\$5,000,000 and over	1969	10.5	221.9	2,060.3	70.8	436.9	174.9	222.6	836.7	68.2	4,102.7
	1970	6.4	314.4	1,686.8	48.1	481.3	182.0	234.9	858.3	64.6	3,876.8
	1971	6.2	191.0	2,056.7	80.3	434.2	265.5	233.0	985.0	75.4	4,327.4
Total, taxable income	1969	51.9	251.0	2,808.7	296.0	569.6	632.1	499.7	1,213.0	322.1	6,644.0
	1970	48.6	342.0	2,377.5	265.1	616.9	645.7	511.4	1,229.4	333.6	6,370.1
	1971	49.2	221.1	2,803.7	346.5	581.9	799.0	552.7	1,419.0	387.2	7,160.4

¹Net of prior year losses.²Excludes insurance carriers.

20.14 Federal and provincial income taxes payable by corporations¹, by industrial division, 1969-71 (million dollars)

Income taxes and year		Agriculture, forestry, fishing	Mining	Manufacturing	Construction	Utilities	Wholesale trade	Retail trade	Finance ²	Services	Total ²
Federal taxes payable	1969	10.9	99.7	1,071.7	74.5	214.4	191.5	143.2	399.9	84.2	2,289.9
	1970	9.4	139.3	911.9	62.8	237.9	199.0	147.6	401.0	83.5	2,192.4
	1971	8.7	83.0	1,038.6	86.1	211.7	251.2	157.7	455.1	94.3	2,386.6
Provincial taxes payable	1969	5.1	26.5	313.1	31.9	62.0	69.5	54.8	126.2	34.5	723.8
	1970	4.5	37.9	272.5	29.0	70.1	72.0	55.7	128.5	38.5	708.7
	1971	4.9	24.0	324.2	40.1	67.6	92.1	63.5	153.1	43.6	813.3
Total	1969	16.1	126.2	1,384.8	106.4	276.5	261.0	198.0	526.1	118.7	3,013.7
	1970	13.9	177.2	1,184.4	91.9	308.0	271.1	203.2	529.5	122.0	2,901.1
	1971	13.6	107.1	1,362.8	126.2	279.4	343.3	221.2	608.2	138.0	3,199.8

¹As declared on income tax returns before assessment.²Excludes insurance carriers.**20.15 Excise taxes collected, by commodity, years ended Mar. 31, 1972 and 1973 (thousand dollars)**

Commodity	1972	1973
Sales tax ¹	1,984,707	2,288,727
Other excise taxes		
Cigarettes, tobacco and cigars	330,121	343,082
Jewellery, watches, ornaments, etc.	11,142	15,015
Matches and lighters	1,231	1,259
Television sets, radios, tubes and phonographs	10,190	78
Toilet preparations	22,037	25,673
Wines	9,373	10,006
Sundry commodities	1,875	2,217
Interest and penalties	3,439	3,433
Less refunds and drawbacks	-997	-315
Total	2,373,118	2,689,175

¹Net after deduction of refunds and drawbacks; excludes tax credited to the Old Age Security Fund.

20.16 Conditional grants and shared-cost programs as at Mar. 31, 1974

Department and project	Provinces participating ¹	Provincial share ² %	Federal contribution 1973-74 \$'000
AGRICULTURE			
Crop insurance	8 (Nfld., NB)	0-50 of admin. costs	15,182
4-H Club assistance	10	50	176
Experimental crop insurance	Que.	50	1,473
Programs under \$100,000	7 (Nfld., Ont., Alta.)	terms of agreement	40
Crop loss assistance	Que., Sask., Alta., BC	50	1,065
ENERGY, MINES AND RESOURCES			
Aeromagnetic surveys	Que., Sask.	50	247
Electrical interconnection studies	Nfld., PEI	terms of agreement	390
Evaluation of the coal reserves of Saskatchewan	Sask.	50	297
Control field surveys	Man., BC	terms of agreement	44
ENVIRONMENT			
Canada Land Inventory	Nfld., Que., Man., Sask., BC	0-50	698
Metropolitan Toronto and Upper Thames	Ont.	terms of agreement	561
Lake Winnipeg, Churchill - Nelson River Agreement	Man.	50	323
Churchill - Nelson Basin studies	Man.	50	150
Churchill River study	Sask.	50	372
Migratory birds crop depredation	Man., Sask., Alta.	terms of agreement	876
Shore damage to property on Great Lakes	Ont.	50	279
Industrial development	7 (Man., Sask., Alta.)	terms of agreement	1,379
Losses to fishermen due to severe storm, June 16 and 17, 1973	Nfld., PEI, NS	terms of agreement	1,732
Canada - Ontario Lower Great Lakes Agreement and Southwestern Dyking	Ont.	terms of agreement	1,273
Saint John River Basin study	Nfld.	terms of agreement	203
Fraser River flood control	BC	50	2,184
Okanagan Basin Agreement	BC	50	209
Newfoundland vessel subsidy	Nfld.	terms of agreement	1,916
Preparation of a comprehensive water quality plan of the St. Lawrence	Que.	terms of agreement	373
Newfoundland - Boston - York Exploratory Fishery	Nfld.	terms of agreement	100
Various programs under \$100,000	Man., Sask., Alta.	terms of agreement	78
EXTERNAL AFFAIRS			
International Joint Commission	Ont.	terms of agreement	240
INDIAN AFFAIRS AND NORTHERN DEVELOPMENT			
Community development on and off reserve	Nfld., Ont.	50	1,086
Child Care Agreement	Man.	—	110
Canada - Ontario Canals Program	Ont.	terms of agreement	7
Forest fire protection agreements	Man., YT	terms of agreement	58
Registered Trapline Fur Agreements	Man., Sask.	terms of agreement	41
Roads on and to reserves	Ont.	terms of agreement	539
Natural resources agreements	Que.	50 up to \$100,000	119
Vocational and technical training	Sask.	—	210
Winter projects	Que., Ont., Man., Sask., Alta., BC	terms of agreement	40
Travel industry development	Sask., Alta., BC	terms of agreement	276
JUSTICE			
All programs included	Nfld., PEI, Ont., Man., Sask., Alta., BC, NWT	terms of agreement	1,804

20.16 Conditional grants and shared-cost programs as at Mar. 31, 1974 (continued)

Department and project	Provinces participating ¹	Provincial share ² , %	Federal contribution 1973-74 \$'000
MANPOWER AND IMMIGRATION			
Agricultural manpower	PEI, NS, NB, Que., Ont., Man., Alta.	50	240
Federal-provincial health agreements	PEI, NS, Que., Ont., Man., Sask., Alta.	50	1
Grants training research			272
NATIONAL DEFENCE			
Contributions to provinces and municipalities for civil defence purposes	10 + NWT	terms of agreement	3,000
NATIONAL HEALTH AND WELFARE			
Health care programs	Nfld. ^{3,4} , NB ³ , Que., Ont., Man., Sask., Alta., NWT	50	37,000
Health Resources Fund Act	10 + NWT	50	2,167
Training of health personnel	10 + YT and NWT	50	677,947
Medical Care Act	10 + YT and NWT	50	1,065,726
Hospital Insurance and Diagnostic Services Act	10 + NWT	50	64 Cr
Income security and social assistance programs	10 + YT and NWT	25	1,814
Old age assistance	10 + YT and NWT	50	4,369
Blind Persons' Allowances	Man.	25	615
Disabled Persons' Allowances	Alta., NWT	50	503
Guaranteed income experimental projects	10 + YT and NWT	50	506,275
Unemployment assistance	Nfld., NS, NB, Ont., Alta., BC, NWT	50	67
Canada Assistance Plan	9 (Que.)	50	9,993
National welfare grants			
Vocational rehabilitation of disabled persons			
PUBLIC WORKS			
Albany Interchange Lighting	PEI	}	3,234
Lease at Johnson Building, Halifax, NS	NS		
Matapedia Interprovincial Bridge between New Brunswick and Quebec	NB		
Maintenance cost of Perley Bridge — agreement that federal government pay 75%, Ontario 25%. Maintenance cost of Macdonald-Cartier Bridge — agreement that federal government pay 33 1/3%, Ontario 66 2/3%.	Ont.	}	130,989
Project Churchill — cost-sharing agreement with Manitoba for construction services and social infrastructures at Churchill, Man.	Man.		
Sylvan Lake, Alta. — wharf replacement	Alta.		
REGIONAL ECONOMIC EXPANSION			
Fund for Rural Economic Development (FRED)	10	50	485,141
Agricultural and Rural Development (ARDA)	10	50	
Special areas infrastructure and highways	10	50	
General Development Agreements	10	50	
Federal-provincial research programs	10	50	
SECRETARY OF STATE			
Post-secondary education	10	50	99
Language texts for citizenship classes	Que., Ont., Man., Sask., Alta.	—	
Bilingualism development	10	50	
Native People's Program	Man., YT	50	
Citizenship and language instruction for immigrants	7 (Nfld., PEI, NB)	50	

20 17 Gross general revenue and expenditure of provincial and territorial governments, years ended Mar. 31, 1972 and 1973 (thousand dollars) (concluded)

Year, source of function	Province or territory											Canada
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT		NWT
1972 (concluded)												
Gross general expenditure by function												
General government	39,635	7,992	24,195	24,199	220,870	238,410	20,185	24,804	70,242	76,560	2,637	28,733
Protection of persons and property	11,095	1,990	14,237	11,686	158,477	235,665	21,569	18,973	57,869	45,984	1,546	3,925
Transportation and communications	81,350	12,635	75,924	65,020	485,540	574,884	171,631	83,003	109,255	186,104	6,432	3,155
Health	87,326	18,884	143,931	108,602	1,295,747	1,798,281	202,988	173,852	365,196	422,251	1,871	7,512
Social welfare	87,624	18,973	146,268	49,686	781,888	539,946	65,023	129,781	184,074	184,074	1,737	4,247
Education	127,672	23,341	139,378	159,079	1,322,514	1,742,416	196,462	148,133	422,870	324,294	6,543	26,555
Natural resources	13,601	1,604	12,041	16,342	70,078	95,587	24,915	20,748	39,305	77,041	—	870
Agriculture, trade and industry, and tourism	31,607	6,965	18,258	9,832	126,323	95,674	16,948	18,500	33,946	18,946	425	3,652
Housing	37,881	1,901	2,612	9,832	37,509	212,433	1,717	14,007	20,845	74,545	72	2,845
Debt charges	50,879	8,090	65,045	33,429	226,089	359,750	44,736	41,037	80,964	32,187	1,724	2,106
General purpose transfers to other levels of government	2,880	577	3,290	36,918	168,545	71,936	13,316	—	41,532	47,927	—	—
All other expenditures	55,891	6,285	25,760	36,918	140,088	137,426	33,539	12,067	37,637	29,616	2,702	7,354
Total	547,289	99,337	566,306	514,793	5,033,670	6,162,408	713,746	620,147	1,416,138	1,519,529	25,690	90,955
1973												
Gross general revenue by source												
Income tax	34,784	6,208	82,947	59,191	1,477,617	1,204,828	139,637	75,240	232,018	316,389	—	—
Individuals	12,053	1,707	18,609	13,578	231,102	447,915	45,462	20,383	70,583	89,509	—	—
Corporations	59,252	12,465	87,816	69,604	731,873	895,258	95,367	53,646	128,000	209,783	—	—
General sales tax	26,862	6,772	46,041	37,899	343,896	486,685	51,367	52,984	91,974	110,818	2,341	3,194
Motive fuel tax	—	—	—	—	—	—	—	—	—	—	—	—
Health insurance premiums	—	—	—	—	—	319,923	21,704	18,984	54,289	40,790	708	—
Social insurance levies	6,244	754	8,399	8,878	107,080	169,936	7,666	13,492	25,284	87,445	—	—
Other provincial taxes	11,181	6,712	5,362	43,320	731,589	314,938	77,663	13,492	25,284	87,445	1,836	1,481
Natural resource revenue	5,828	440	2,387	5,972	84,508	65,081	22,384	49,713	351,898	23,227	133	111
Privileges, licences and permits	16,267	2,127	16,777	14,762	170,009	293,081	22,384	49,713	39,698	53,492	758	746
Liquor profits	3,398	3,398	3,398	22,649	103,000	189,035	33,347	14,636	68,957	96,013	2,117	1,736
Non-tax revenue from own sources	41,701	16,359	64,360	41,976	435,955	567,826	88,881	107,924	170,405	183,595	2,328	8,404
General purpose transfers from other levels of government	127,059	26,201	124,470	117,029	720,033	50,283	94,615	137,736	22,945	6,624	10,606	56,615
Specific purpose transfers from other levels of government	119,564	30,867	139,650	127,777	539,530	1,177,447	179,089	136,137	272,610	308,025	15,607	20,738
Total	471,795	114,008	628,711	562,637	5,734,192	6,359,645	837,826	729,409	1,453,949	1,878,805	36,434	93,025
Gross general expenditure by function												
General government	20,952	9,225	26,364	29,079	256,129	288,042	23,954	27,011	74,160	97,328	3,106	34,109
Protection of persons and property	12,610	1,884	17,913	13,229	181,481	259,277	25,419	25,419	51,417	64,074	2,320	2,657
Transportation and communications	70,418	15,080	74,033	70,588	549,830	572,759	68,659	82,023	97,347	230,281	11,321	3,762
Health	102,411	20,801	159,384	126,574	1,486,044	2,033,322	213,520	182,737	387,103	475,988	3,105	9,216
Social welfare	99,346	20,596	52,102	56,106	843,938	568,090	90,621	80,257	158,705	210,900	1,857	5,701
Education	144,012	28,975	159,217	168,220	1,392,987	1,948,283	203,163	164,621	336,903	435,297	10,397	28,161
Natural resources	11,394	1,642	10,889	16,292	81,144	80,546	25,411	15,335	34,151	76,271	225	1,732
Agriculture, trade and industry, and tourism	32,303	8,726	18,160	21,675	145,516	101,070	23,511	25,735	35,914	21,951	297	4,573
Housing	1,610	2,059	14,306	21,675	43,531	59,843	11,536	11,536	27,654	90,471	1,223	8,512
Debt charges	56,230	8,578	72,206	42,464	286,729	449,244	53,681	43,349	92,510	35,847	2,012	3,328
General purpose transfers to other levels of government	3,820	543	3,890	—	197,220	92,095	16,205	—	45,937	54,921	—	—
All other expenditures	14,678	4,102	29,861	41,012	146,365	251,490	48,663	34,368	36,458	37,966	3,843	9,908
Total	529,844	112,251	638,344	585,419	5,610,915	6,704,063	804,344	697,799	1,478,257	1,751,295	39,706	111,660
Total												

20.18 Liabilities of provincial and territorial governments as at Mar. 31, 1972 and 1973 (thousand dollars)

Province or territory and year		Short-term bank loans and over-drafts	Payables	Loans and advances	Treasury bills	Savings bonds	Bonds and debentures	Notes	Deposits and other liabilities	Total
Newfoundland	1972 ^r	42,430	8,290	21,708	28,191	—	674,754	—	47,167	822,540
	1973	19,490	5,874	33,007	6,003	—	880,345	64,949	38,971	1,048,639
Prince Edward Island	1972	1,034	6,592	10,401	5,000	—	100,468	—	10,781	134,276
	1973	1,896	8,646	15,259	6,500	—	101,983	—	12,073	146,357
Nova Scotia	1972	35,038	66,567	42,055	—	—	977,686	—	33,943	1,155,289
	1973	43,704	66,944	58,915	—	—	1,025,114	—	34,309	1,228,986
New Brunswick	1972	—	72,634	12,608	49,759	—	523,650	—	21,474	680,125
	1973	—	77,731	15,991	6,489	—	589,804	—	23,434	713,449
Quebec	1972	55,064	438,548	467,117	7,000	269,614	2,494,135	—	131,394	3,862,872
	1973	67,795	540,727	539,609	69,200	346,072	2,732,202	—	104,247	4,399,852
Ontario	1972	15	104,977	161,428	190,000	—	6,023,340	—	249,630	6,729,390
	1973	—	31,806	225,489	260,000	—	7,091,186	—	227,735	7,836,216
Manitoba	1972 ^r	94,958	27,633	34,614	36,593	55,726	521,737	—	51,768	823,029
	1973	65,609	31,792	37,836	40,901	52,870	598,463	—	48,019	875,490
Saskatchewan	1972 ^r	33,161	2,593	11,870	32,893	12,615	688,236	—	2,371	783,739
	1973	52,373	5,663	16,120	31,649	11,250	694,718	—	972	812,745
Alberta	1972	—	97,202	4,803	3,081	—	1,263,040	39,000	13,157	1,420,283
	1973	56,598	94,706	6,402	2,589	—	1,349,939	39,000	24,806	1,574,040
British Columbia	1972 ^r	16,818	69,667	—	5,613	—	536,663	—	21,004	649,765
	1973	13,425	85,025	—	4,614	—	607,247	—	20,536	730,847
Yukon Territory	1972	—	1,430	28,823	—	—	—	—	1,586	31,839
	1973	—	2,557	34,904	—	—	—	—	2,441	39,902
Northwest Territories	1972	—	8,060	48,313	—	—	—	—	1,849	58,222
	1973	2,280	11,737	68,724	—	—	—	—	2,443	85,184
Canada	1972 ^r	278,518	904,193	843,740	358,130	337,955	13,803,709	39,000	586,124	17,151,369
	1973	323,170	963,208	1,052,256	427,945	410,192	15,671,001	103,949	539,986	19,491,707

20.19 Liabilities guaranteed by provincial and territorial governments¹ as at Mar. 31, 1972 and 1973 (thousand dollars)

Province or territory and year		Bonds and debentures	Bank loans	Other	Total
Newfoundland	1972	136,242	129,509	106,664	372,415
	1973	148,924	29,896	109,305	288,125
Prince Edward Island	1972	10,218	8,700	376	19,294
	1973	9,691	6,320	366	16,377
Nova Scotia	1972	80,534	29,176	5,500	115,210
	1973	189,253	43,982	6,699	239,934
New Brunswick	1972	329,453	19,314	2,606	351,373
	1973	339,449	47,193	3,194	389,836
Quebec	1972	3,072,993	166,038	110,575	3,349,606
	1973	3,481,666	180,309	37,705	3,699,680
Ontario	1972	2,495,200	41,413	228,650	2,765,263
	1973	2,796,758	89,203	158,800	3,044,761
Manitoba	1972	822,433	—	5,000	827,433
	1973	987,057	—	3,000	990,057
Saskatchewan	1972	52,862	9,465	54,163	116,490
	1973	17,856	12,669	52,198	82,723
Alberta	1972	461,184	43,128	11,643	515,955
	1973	482,890	57,737	12,596	553,223
British Columbia	1972	2,503,597	62	—	2,503,659
	1973	2,683,844	13	—	2,683,857
Northwest Territories	1972	—	171	—	171
	1973	—	139	—	139
Canada	1972	9,964,716	446,976	525,177	10,936,869
	1973	11,137,388	467,461	383,863	11,988,712

¹Excludes liabilities of provincial government special funds guaranteed by provincial governments but considered as provincial government liabilities.

20.20 Bonds and debentures¹, by market, of provincial governments outstanding as at Mar. 31, 1972 and 1973
(thousand dollars)

Province and year		Domestic	Foreign			International	Total
			Traditional	United States	Europe	Other	
Newfoundland	1972	305,761	172,533		45,033	—	586,836
	1973	353,069	167,496		126,932	—	773,427
Prince Edward Island	1972	74,500	8,489		—	—	82,989
	1973	72,300	8,418		—	—	80,718
Nova Scotia	1972	322,745	431,775		—	—	799,235
	1973	314,345	428,773		20,862	—	808,095
New Brunswick	1972	250,529	128,490		—	9,000	388,019
	1973	230,077	162,266		—	33,043	425,386
Quebec	1972 ^r	1,806,745	288,361	100,940	—	68,977	2,265,023
	1973	1,774,293	453,150	150,845	32,682	54,494	2,465,464
Ontario	1972	1,119,752	1,065,312	104,191	—	—	2,289,255
	1973	1,267,859	1,216,637	134,948	—	—	2,619,444
Manitoba	1972	99,275	155,000	26,808	—	—	281,083
	1973	99,275	155,000	46,171	—	—	300,446
Saskatchewan	1972 ^r	231,276	165,388	25,154	—	—	421,818
	1973	229,524	137,807	25,154	—	—	392,485
Alberta	1972	678,013	139,429	—	—	346	817,788
	1973	678,013	134,018	—	—	106	812,137
British Columbia	1972	125,000	146,987	—	—	22,500	294,487
	1973	124,250	143,314	—	—	22,500	290,064
Total	1972 ^r	5,013,596	2,701,764	302,126	—	209,047	8,226,533
	1973	5,143,005	3,006,879	504,912	32,682	280,188	8,967,666

¹Includes savings bonds.

20.21 General revenue of local governments, fiscal years ended nearest Dec. 31, 1970 and 1971 (thousand dollars)

Source	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1970 (Gross general revenue)													
Taxes, general and school	7,267	5,489	63,498	13,695	704,104 ¹	1,352,017	129,462	142,800	219,048	344,922	349	1,014	2,983,665
Real property	70	331	7,915	—	54,476	184,197	1,140	10,075	17,752	11,579	...	70	9,456
Personal property	2,680	565	3,562	—	—	—	9,658	7	—	—	...	...	294,614
Business	366	157	2,428	—	—	—	—	3,766	—	—	...	...	2,958
Toll	—	—	—	—	7,403 ^a	—	692	—	—	—	...	...	11,861
Sales and amusement	—	—	—	—	—	—	—	—	—	—	...	...	—
Special assessments (owner's share)	337	51	758	11	160,152	35,397	7,971	8,560	18,411	26,524	48	48	258,268
and charges	1,168	—	556	—	40,204	—	28	—	—	50	...	...	42,006
Other	11,888	6,593	78,717	13,706	966,339	1,571,611	148,951	165,208	255,211	383,075	397	1,132	3,602,828
Total, taxes	458	115	2,188	714	17,909	23,055	3,802	3,469	13,116	15,041	117	147	80,131
Privileges, licences and permits	2,278	837	8,453	6,649	36,660	152,210	18,857	19,789	65,636	37,038	311	354	37,038
Sales and services	11	120	1,621	176	23,673	18,662	3,153	2,757	6,638	6,057	17	15	62,900
Fines and penalties	51	30	1,120	90	10,425	15,392	2,762	2,768	5,483	5,613	32	15	43,809
Interest, discount, etc.	—	—	—	—	2,372	—	4,303	4,437	16,442	2,613	—	—	30,440
Own enterprise contributions	1,625	68	3,989	1,207	25,650	35,532	12,591	4,860	11,732	5,479	7	322	103,062
Other revenue from own sources	16,311	7,883	96,099	22,684	1,083,028	1,816,462	194,419	203,288	374,258	454,944	881	1,985	4,272,242
Total, revenue from own sources	25	84	1,451	2,247	3,061	19,352	1,161	469	874	2,088	—	2	30,814
Conditional transfers from:	3,184	11,129	90,302	597	794,644	1,257,052	127,398	103,630	223,558	284,772	136	1,080	2,897,482
Federal government	3,209	11,213	91,753	2,844	797,705	1,276,404	128,559	104,099	224,432	286,860	136	1,082	2,928,296
Provincial governments	—	—	—	—	—	—	—	—	—	—	—	—	—
Total, conditional transfers	219	95	3,696	—	3,287	25,654	3,189	1,588	3,082	3,178	98	344	44,430
Unconditional transfers	—	20	—	—	2,303	—	—	108	—	—	—	—	531
From governments	—	7	890	—	2,321	7,102	2,959	692	3,982	632	—	126	18,711
Federal — grants in lieu of taxes	1,952	517	4,930	15,611	132,815	55,620	7,314	—	37,553	—	254	380	256,926
Provincial — other	—	—	—	—	—	—	—	—	—	—	—	—	—
From government enterprises ^a	117	—	2,955	—	2,767	4,119	1,442	106	1,334	1,292	—	—	12,798
Federal	—	—	1,577	—	330	12,352	2,149	2,314	—	2,819	—	—	22,875
Provincial	2,288	639	14,048	15,611	141,923	104,847	17,053	4,808	45,931	7,921	352	850	356,271
Total, unconditional transfers	5,497	11,852	105,801	18,455	939,628	1,381,251	145,612	108,907	270,363	294,781	488	1,932	3,284,567
Total, transfers	21,808	19,735	201,900	41,139	2,022,656	3,197,713	340,031	312,195	644,621	749,725	1,369	3,917	7,556,809
Gross general revenue	18,345	9,403	116,577	24,836	1,195,753	1,966,777	227,034	222,007	413,981	510,230	1,142	3,407	4,709,492
1971 (General revenue)	13,002	7,817	89,321	15,425	923,059	1,656,639	157,277	168,122	282,806	413,224	490	1,352	3,728,534
Taxes	7,566	6,338	74,775	15,425	760,329	1,419,947	140,191	144,459	247,253	383,172	447	1,210	3,201,512
Real property	407	239	831	—	70,099	41,777	4,519	10,914	16,817	17,262	43	66	162,974
Personal property	144	282	8,412	—	—	—	1,347	—	—	—	...	...	31,985
Business	2,845	586	4,201	—	57,837	194,915	10,505	11,125	18,736	12,685	...	76	34,751
Other	2,040	372	34,794	—	34,794	—	715	1,624	—	105	...	...	40,752
Grants in lieu of taxes	2,086	159	9,765	—	14,320	51,198	12,901	5,225	17,464	8,394	92	587	127,191
Federal government	117	5	3,170	—	4,277	25,196	3,474	995	3,595	2,739	92	277	44,901
Provincial government	194	133	3,929	—	2,740	5,258	1,189	266	—	1,267	—	—	14,012
Local government enterprises	430	20	902	—	2,803	4,568	3,546	231	6,972	1,042	—	310	25,825
Non-government organizations	1,345	1	1,764	—	642	16,176	2,410	2,216	6,881	2,617	—	—	7,743
Total, general revenue	18,345	9,403	116,577	24,836	1,195,753	1,966,777	227,034	222,007	413,981	510,230	1,142	3,407	4,709,492
Revenue from own sources	458	115	2,188	714	17,909	23,055	3,802	3,469	13,116	15,041	117	147	80,131
Conditional transfers from:	3,184	11,129	90,302	597	794,644	1,257,052	127,398	103,630	223,558	284,772	136	1,080	2,897,482
Federal government	3,209	11,213	91,753	2,844	797,705	1,276,404	128,559	104,099	224,432	286,860	136	1,082	2,928,296
Provincial governments	—	—	—	—	—	—	—	—	—	—	—	—	—
Total, conditional transfers	219	95	3,696	—	3,287	25,654	3,189	1,588	3,082	3,178	98	344	44,430
Unconditional transfers	—	20	—	—	2,303	—	—	108	—	—	—	—	531
From governments	—	7	890	—	2,321	7,102	2,959	692	3,982	632	—	126	18,711
Federal — grants in lieu of taxes	1,952	517	4,930	15,611	132,815	55,620	7,314	—	37,553	—	254	380	256,926
Provincial — other	—	—	—	—	—	—	—	—	—	—	—	—	—
From government enterprises ^a	117	—	2,955	—	2,767	4,119	1,442	106	1,334	1,292	—	—	12,798
Federal	—	—	1,577	—	330	12,352	2,149	2,314	—	2,819	—	—	22,875
Provincial	2,288	639	14,048	15,611	141,923	104,847	17,053	4,808	45,931	7,921	352	850	356,271
Total, unconditional transfers	5,497	11,852	105,801	18,455	939,628	1,381,251	145,612	108,907	270,363	294,781	488	1,932	3,284,567
Total, transfers	21,808	19,735	201,900	41,139	2,022,656	3,197,713	340,031	312,195	644,621	749,725	1,369	3,917	7,556,809
Gross general revenue	18,345	9,403	116,577	24,836	1,195,753	1,966,777	227,034	222,007	413,981	510,230	1,142	3,407	4,709,492
Revenue from own sources	458	115	2,188	714	17,909	23,055	3,802	3,469	13,116	15,041	117	147	80,131
Conditional transfers from:	3,184	11,129	90,302	597	794,644	1,257,052	127,398	103,630	223,558	284,772	136	1,080	2,897,482
Federal government	3,209	11,213	91,753	2,844	797,705	1,276,404	128,559	104,099	224,432	286,860	136	1,082	2,928,296
Provincial governments	—	—	—	—	—	—	—	—	—	—	—	—	—
Total, conditional transfers	219	95	3,696	—	3,287	25,654	3,189	1,588	3,082	3,178	98	344	44,430
Unconditional transfers	—	20	—	—	2,303	—	—	108	—	—	—	—	531
From governments	—	7	890	—	2,321	7,102	2,959	692	3,982	632	—	126	18,711
Federal — grants in lieu of taxes	1,952	517	4,930	15,611	132,815	55,620	7,314	—	37,553	—	254	380	256,926
Provincial — other	—	—	—	—	—	—	—	—	—	—	—	—	—
From government enterprises ^a	117	—	2,955	—	2,767	4,119	1,442	106	1,334	1,292	—	—	12,798
Federal	—	—	1,577	—	330	12,352	2,149	2,314	—	2,819	—	—	22,875
Provincial	2,288	639	14,048	15,611	141,923	104,847	17,053	4,808	45,931	7,921	352	850	356,271
Total, unconditional transfers	5,497	11,852	105,801	18,455	939,628	1,381,251	145,612	108,907	270,363	294,781	488	1,932	3,284,567
Total, transfers	21,808	19,735	201,900	41,139	2,022,656	3,197,713	340,031	312,195	644,621	749,725	1,369	3,917	7,556,809
Gross general revenue	18,345	9,403	116,577	24,836	1,195,753	1,966,777	227,034	222,007	413,981	510,230	1,142	3,407	4,709,492
Revenue from own sources	458	115	2,188	714	17,909	23,055	3,802	3,469	13,116	15,041	117	147	80,131
Conditional transfers from:	3,184	11,129	90,302	597	794,644	1,257,052	127,398	103,630	223,558	284,772	136	1,080	2,897,482
Federal government	3,209	11,213	91,753	2,844	797,705	1,276,404	128,559	104,099	224,432	286,860	136	1,082	2,928,296
Provincial governments	—	—	—	—	—	—	—	—	—	—	—	—	—
Total, conditional transfers	219	95	3,696	—	3,287	25,654	3,189	1,588	3,082	3,178	98	344	44,430
Unconditional transfers	—	20	—	—	2,303	—	—	108	—	—	—	—	531
From governments	—	7	890	—	2,321	7,102	2,959	692	3,982	632	—	126	18,711
Federal — grants in lieu of taxes	1,952	517	4,930	15,611	132,815	55,620	7,314	—	37,553	—	254	380	256,926
Provincial — other	—	—	—	—	—	—	—	—	—	—	—	—	—
From government enterprises ^a	117	—	2,955	—	2,767	4,119	1,442	106	1,334	1,292	—	—	12,798
Federal	—	—	1,577	—	330	12,352	2,149	2,314	—	2,819	—	—	22,875
Provincial	2,288	639	14,048	15,611	141,923	104,847	17,053	4,808	45,931	7,921	352	850	356,271
Total, unconditional transfers	5,497	11,852	105,801	18,455	939,628	1,381,251	145,612	108,907	270,363	294,781	488	1,932	3,284,567
Total, transfers	21,808	19,735	201,900	41,139	2,022,656	3,197,713	340,031	312,195	644,621	749,725	1,369	3,917	7,556,809
Gross general revenue	18,345	9,403	116,577	24,836	1,195,753	1,966,777	227,034	222,007	413,981	510,230	1,142	3,407	4,709,492
Revenue from own sources	458	115	2,188	714	17,909	23,055	3,802	3,469	13,116	15,041	117	147	80,131
Conditional transfers from:	3,184	11,129	90,302	597	794,6								

20.21 General revenue of local governments, fiscal years ended nearest Dec. 31, 1970 and 1971 (thousand dollars) (concluded)

Source	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1971 (concluded)													
Sales of goods and services	2,043	1,028	10,898	6,857	172,079	149,926	32,718	27,255	50,765	52,877	383	1,243	508,072
Water	1,945	408	5,093	6,210	124,926	89,165	16,378	11,977	23,229	25,680	222	476	305,709
Other	98	620	5,805	647	47,153	60,761	16,340	15,278	27,536	27,197	767	767	202,363
Rentals	147	19	513	92	7,550	8,265	469	899	6,262	4,901	161	86	29,218
Concessions and franchises	5	—	—	423	—	2,118	44	21	3,518	2,991	—	—	6,420
Licences and permits	353	55	982	439	9,004	17,564	2,938	1,773	7,081	9,974	86	78	50,327
Remittances from own enterprises	—	140	204	—	—	14	—	5,431	14,711	2,336	—	—	22,836
Interest	77	7	1,553	208	8,791	12,766	2,362	4,092	337	7,938	20	6	38,157
Remittances and penalties on taxes	17	16	1,095	47	11,712	14,216	2,301	1,269	6,026	2,706	26	19	39,450
Fines	17	144	674	202	13,901	7,514	1,608	1,714	5,136	4,917	20	7	35,854
Miscellaneous	598	18	1,572	1,143	35,337	46,557	14,416	6,206	19,875	2,672	10	29	128,433
Transfers	17,750	13,217	125,410	20,633	1,099,577	1,758,025	173,658	170,288	391,494	349,530	742	1,838	4,122,162
General purpose													
Provincial governments	3,851	544	5,583	17,108	170,505	68,730	7,301	3,037	38,038	—	420	455	315,572
Specific purpose	13,899	12,673	119,827	3,525	929,072	1,689,295	166,357	167,251	353,456	349,530	322	1,383	3,806,590
Federal government	5,360	401	5,216	2,921	20,084	32,595	3,917	3,016	4,617	10,028	50	249	88,304
Provincial governments	8,539	12,272	114,611	554	908,988	1,656,900	162,440	164,235	348,839	339,502	272	1,134	3,718,286
Total, general revenue	36,095	22,620	241,987	45,469	2,295,330	3,724,802	400,692	392,295	805,475	859,760	1,884	5,245	8,831,654

¹Includes \$59,950,000 special taxes, and \$423,600,000 for school tax revenue.

²Amusement tax only (Quebec).

³Grants are mostly in lieu of taxes.

20.22 General expenditure of local governments, fiscal years ended nearest Dec. 31, 1970 and 1971 (thousand dollars)

Function	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1970 (Gross general expenditure)													
General government services	4,203	399	9,518	4,163	132,102	100,365	17,538	13,136	22,663	30,101	268	414	334,870
Protection of persons and property	1,632	958	13,879	10,876	178,926	265,896	23,648	17,843	48,178	66,080	231	192	628,339
Public works	4,713	995	9,385	12,582	229,536	428,467	38,549	44,574	100,565	67,063	253	614	937,296
Sanitation and waterworks	3,992	731	17,450	10,730	143,167	197,713	21,757	20,300	53,602	65,292	995	632	536,361
Health	9	—	15,313	89	11,246	65,970	4,397	10,276	44,316	5,029	11	19	156,676
Social welfare	—	42	15,655	32	6,135	174,593	6,557	2,879	10,712	81,326	—	—	297,931
Recreation and community services	834	594	3,554	4,635	71,048	154,770	12,646	10,656	33,226	40,330	104	527	333,924
Education (excl. debt service charges) ¹	1,000	16,480	114,705	66	1,120,979	1,729,603	180,634	157,989	338,375	376,845	—	954	4,037,630
Debt charges (excl. retirement and sinking fund contributions)	4,985	1,580	11,892	4,522	218,174	199,157	19,331	17,157	42,173	51,130	33	118	570,252
Debt service interest ²	1,536	1,132	10,035	4,146	208,845	183,547	17,455	14,611	40,231	46,110	33	94	527,775
Other long-term interest	—	152	253	—	3,894	—	361	213	23	1,883	—	—	6,779
Other	3,449	296	1,604	376	5,435	15,610	1,515	2,333	1,919	3,137	—	24	35,698
Own enterprises	640	—	621	—	—	26,985	5,944	1,292	2,912	1,154	5	—	38,888
Other expenditure	587	306	8,646	1,107	15,168	76,893	5,355	9,192	21,241	22,099	98	134	160,826
Provision for reserves	395	263	2,375	—	5,572	37,039	4,576	6,287	4,038	16,659	50	77	77,342
Other	192	43	6,271	1,026	9,596	39,854	779	2,905	17,203	5,440	48	127	83,484
Gross general expenditure	22,595	22,086	220,618	48,802	2,126,816	3,420,412	336,356	305,294	718,963	805,449	1,998	3,604	8,032,993

20.22 General expenditure of local governments, fiscal years ended nearest Dec. 31, 1970 and 1971 (thousand dollars) (continued)

Function	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1971 (General expenditure)													
General government	3,262	495	11,534	4,408	118,269	103,274	14,154	13,941	28,912	37,696	342	485	336,772
Executive and legislative	533	27	7,719	335	6,341	8,706	1,794	1,299	1,726	2,099	36	22	23,637
Administrative	1,860	382	7,822	3,344	111,883	84,069	8,556	9,585	16,181	29,606	205	358	273,851
Other	869	86	2,993	729	45	10,499	3,804	3,057	11,005	5,991	101	105	39,284
Protection of persons and property	1,403	753	14,833	10,608	169,436	267,844	24,157	17,284	52,864	73,653	293	454	633,582
Police services	188	539	6,291	5,207	94,609	147,449	12,683	8,755	27,754	33,556	32	33	337,096
Courts of law and correctional services	—	—	4,486	—	4,689	—	—	136	14	5,394	—	—	12,746
Freighting services	791	213	5,550	5,013	61,300	93,453	9,581	6,538	18,521	27,176	212	370	228,698
Emergency measures	—	—	6	58	—	—	189	—	48	2,130	—	11	2,510
Regulatory services	33	—	360	—	—	12,354	13	461	1,370	4,015	—	29	18,635
Other	391	991	12,268	13,942	8,838	14,588	1,664	1,326	5,157	1,382	49	11	13,897
Transportation and communications	10,559	—	391	—	281,476	496,833	4,124	54,026	113,789	85,987	584	873	1,116,452
Common services	—	—	17	985	46,033	6,272	1,941	5,218	3,015	11,168	216	206	75,214
Road	10,559	974	11,057	13,762	224,047	473,589	42,504	48,668	108,901	73,741	367	649	1,008,818
Administration	50	26	376	327	—	7,936	1,372	1,044	3,568	1,813	—	5	16,521
Engineering	146	—	687	209	—	6,604	525	739	202	902	—	9	10,019
Roads and streets	8,165	728	6,421	9,363	138,371	394,987	32,613	39,506	85,006	54,250	302	524	770,436
Snow and ice removal	1,106	—	1,453	1,950	68,833	22,015	2,838	2,000	4,105	3,192	23	36	107,606
Bridges, subways, tunnels, etc.	—	—	1	—	5,632	5,632	1,605	1,788	8,597	3,442	—	—	23,065
Street lighting	760	132	1,665	1,215	12,852	18,726	2,295	2,243	4,051	5,424	38	56	49,457
Traffic services	34	31	227	280	3,631	8,806	1,217	783	1,909	2,588	—	19	19,365
Parking	22	—	122	211	360	819	37	261	619	530	4	—	2,983
Other	276	2	105	7	—	8,064	2	504	844	910	—	—	9,694
Public transit	—	—	226	30	11,396	3,098	679	47	1,772	910	—	18	16,566
Other	—	—	—	—	—	13,874	—	—	7	168	—	—	1,566
Environment	23,991	786	24,913	13,529	161,726	231,875	35,509	18,158	53,052	81,562	462	2,160	665,887
Water purification and supply	13,111	337	11,263	7,672	101,573	18,138	18,819	8,415	16,839	26,549	206	1,327	283,871
Sewage collection and disposal	8,128	372	10,571	4,151	32,441	128,679	11,316	6,662	25,532	41,998	145	670	273,555
Garbage and waste collection and disposal	1,544	177	2,841	1,487	25,416	45,058	4,707	1,070	10,362	13,311	111	173	108,357
Other	1,208	—	238	219	2,236	225,808	28,353	58,184	110,906	6,296	70	—	101,704
Health	—	20	24,146	24	11,830	235,808	28,353	58,184	110,906	6,296	23	41	465,641
Preventive services	10	—	243	—	7,884	45,194	2,772	1,449	4,820	5,700	23	41	67,380
Medical care	—	—	—	—	3,288	—	—	3	365	365	—	—	428
Hospital care	—	19	23,868	—	—	180,614	25,664	56,278	104,760	578	—	—	392,047
Other	—	—	—	—	—	—	—	—	—	—	—	—	—
Social welfare	—	1	35	24	568	220,239	6,074	2,822	14,928	92,034	—	—	360,370
Administration	—	1	17,482	51	5,833	220,239	6,074	2,822	14,928	92,034	—	—	360,370
Assistance	—	—	—	—	—	—	—	—	—	—	—	—	—
Services	—	—	8,651	—	266	149,009	4,932	1,625	9,515	84,215	—	—	258,213
Other	—	—	8,291	—	—	71,230	5	549	2,707	4,021	—	—	86,808
Housing	—	—	—	45	640	—	—	—	—	—	—	—	—
General assistance — environmental planning and zoning — community development	1,230	329	2,384	2,739	35,007	40,398	3,518	1,500	4,716	9,195	—	527	101,543
Other	—	—	—	—	—	—	—	—	—	—	—	—	—
Natural resources	1,097	4	1,088	162	4,773	8,723	1,871	270	3,594	3,815	—	10	20,720
Agriculture, trade and industry, and tourism	133	314	1,288	2,158	23,202	29,590	1,110	201	3,594	3,687	—	444	66,775
Agriculture	—	11	8	419	6,942	2,085	1,537	1,029	1,118	1,118	—	73	14,048
Trade and industry	—	—	—	—	—	2,886	1,043	187	272	5,665	—	—	10,055
Regional development commissions	—	—	349	446	2,423	6,724	389	87	62	1,254	38	91	11,863
Industrial parks and commissions	—	—	—	—	—	—	—	—	—	—	—	—	—
Tourism	—	—	349	446	1,700	6,724	389	87	62	1,254	38	91	11,863
—	—	—	—	—	723	6,449	253	87	—	1,200	38	—	2,003
—	—	—	—	—	—	—	—	—	62	—	—	91	9,860

20.22 General expenditure of local governments, fiscal years ended nearest Dec. 31, 1970 and 1971 (thousand dollars)(concluded)

Function	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1971 (concluded)													
Recreation and culture	1,334	541	5,489	5,459	106,341	179,148	16,386	9,847	42,030	54,332	198	617	421,722
Recreational facilities	1,037	498	4,249	5,284	54,160	113,699	10,942	5,954	30,469	41,946	190	580	269,008
Cultural facilities	5	24	1,240	138	8,651	58,954	4,833	3,658	9,901	10,665	1	7	98,077
Other	292	19	—	37	43,530	6,495	611	235	1,660	1,721	7	30	54,637
Education — primary and secondary	921	20,214	123,486	68	1,255,423	1,857,535	193,652	171,107	368,106	424,612	—	1,369	4,416,493
Fiscal services	5,326	1,842	16,164	5,134	294,766	339,179	34,155	28,028	65,038	83,223	140	208	873,203
Debt charges	4,307	1,637	12,853	4,837	289,595	230,396	20,375	19,312	52,558	64,660	71	197	700,798
Interest on short-term borrowing	2,406	117	85	—	825	11,844	1,003	223	—	2,102	—	9	16,715
Interest on long-term borrowing	2,406	1,445	11,206	4,473	256,338	218,394	18,087	16,351	48,855	58,216	71	174	636,016
Other	1,394	75	1,562	364	32,432	158	1,285	2,738	3,703	4,342	—	14	48,067
Transfers to reserves and allowances	184	205	2,984	297	5,171	76,052	6,778	7,274	7,055	18,287	69	11	124,367
Transfers to own enterprises	835	—	327	—	—	32,731	7,002	1,442	5,425	276	—	—	48,038
Other services	118	—	1,769	1,465	74	10,676	—	—	9,146	913	11	4	24,176
Total, general expenditure	48,154	25,972	254,817	57,873	2,443,510	4,002,419	402,514	375,173	863,821	956,386	2,091	6,829	9,439,559

^aEducation expenditure for Quebec is estimated.
^bSchool debenture interest in Quebec estimated at \$82 million.

20.23 Direct debt of local governments, fiscal years ended nearest Dec. 31, 1970 and 1971 (thousand dollars)

Year and direct debt	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1970													
Debtenture debt	25,554	17,104	176,709	66,522	2,365,543	3,602,599	369,975	261,366	940,769	840,896	1,267	2,642	8,670,946
Less sinking funds	141	4,176	4,805	2,487	6,900	417,364	37,982	32,635	6,598	73,703	—	—	586,791
Net debenture debt	25,413	12,928	171,904	64,035	2,358,643	3,185,235	331,993	228,731	934,171	767,193	1,267	2,642	8,084,155
Temporary loans and bank overdrafts	19,540	1,375	37,919	9,233	181,661	226,108	57,534	15,151	20,229	28,212	18	803	597,783
Accounts and other payables	22,901	977	20,496	9,706	142,119	147,242	16,507	23,247	51,588	30,883	158	754	466,578
Other liabilities	6,182	64	7,602	4,333	106,124	47,072	17,011	9,670	32,213	24,905	35	295	255,506
Total, direct debt less sinking funds	74,036	15,344	237,921	87,307	2,788,547 ^a	3,605,657 ^a	423,045	276,799	1,038,201	851,193	1,478	4,494	9,404,022
1971													
Long-term (debentured)	28,934	16,547	186,297	72,871	2,447,123	3,799,902	383,424	261,636	1,001,019	898,399	1,559	3,391	9,101,102
Less sinking funds	4,386	1,759	2,512	1,257	4,173	417,363	40,638	35,534	7,536	70,752	—	—	580,022
Net long-term (debentured)	28,934	14,788	183,785	71,618	2,442,950	3,382,539	342,786	226,102	993,083	827,647	1,559	3,391	8,521,080
Short-term borrowings	20,938	1,961	18,538	7,076	2,443,521	3,382,539	342,786	226,102	993,083	827,647	1,559	3,391	8,521,080
Accounts and other payables	36,398	1,004	20,938	10,742	173,863	153,841	40,034	20,882	23,075	48,631	113	1,570	668,311
Other liabilities	8,737	235	9,063	4,334	68,906	36,678	39,937	25,523	98,710	45,476	289	1,029	666,933
Total, direct debt less sinking funds	94,997	14,956	257,084	96,320	2,914,656	3,782,447	452,264	302,507	1,160,665	944,802	1,901	6,369	10,028,968

^aData for Quebec schools not available. Includes \$30,599,000 debentures of the Montreal Transportation Commission guaranteed by the City of Montreal.
^bIncludes other long-term debt due to Ontario Water Resources Commission.

20.24 Personal income tax payable on various levels of income, 1975 (dollars)

Status	Income ¹	Federal income tax ²	Provincial income tax ³
Single taxpayer — no dependents	2,000	—	—
	3,000	—	35
	4,000	96	90
	5,000	287	148
	8,000	909	338
	10,000	1,369	479
	15,000	2,630	872
	20,000	4,107	1,362
	50,000	15,086	4,830
	100,000	37,683	11,722
Married taxpayer — no dependents	3,000	—	—
	4,000	—	7
	5,000	—	51
	8,000	564	233
	10,000	991	363
	20,000	3,586	1,189
	50,000	14,379	4,386
	100,000	36,910	11,486
Married taxpayer — two children under age 16	4,000	—	2
	5,000	—	42
	8,000	528	222
	10,000	951	351
	20,000	3,536	1,172
	50,000	14,304	4,592
	100,000	36,829	11,461

¹It is assumed that income is from salary and wages only and that all taxpayers take the standard deduction of \$100. As well as personal exemptions, the 3% employment expense allowance is deducted in computing taxable income.

²Federal income tax includes the tax credit of 8%, minimum \$200, maximum \$750.

³Provincial income tax is calculated at the rate of 30.5% of federal basic tax. While some provinces impose tax at different rates, this rate is applicable to more than one half of all Canadians. No account is taken of various provincial tax credits.

20.25 Special excise taxes levied as at Dec. 31, 1974

Item	Tax
Cigarettes	3¢ per 5 cigs.
Cigars	20½¢ ad valorem
Pipe tobacco, cut tobacco, snuff	90¢ per lb.
Jewellery, including articles of ivory, amber, shell, precious or semi-precious stones, clocks and watches ¹ , goldsmiths' and silversmiths' products, except gold-plated or silver-plated ware for the preparation or serving of food or drink	
Lighters	10% ad valorem
Playing cards	10¢ per lighter
Slot machines — coin, disc or token-operated games or amusement devices	20¢ per pack
Matches	10% ad valorem
Tobacco, pipes, cigar and cigarette holders and cigarette rolling devices	10% ad valorem
Wines ²	
Wines of all kinds containing not more than 7% absolute alcohol by volume	25¢ per gal
Non-sparkling wines containing more than 7% absolute alcohol by volume but not more than 40% proof spirit	50¢ per gal
Sparkling wines	\$2.50 per gal
Wines (additional excise taxes) ³	
Wines of all kinds containing not more than 7% absolute alcohol by volume	22½¢ per gal
Wines of all kinds containing more than 7% absolute alcohol by volume	45¢ per gal
Ciders ⁴	
Ciders containing not more than 7% absolute alcohol by volume	25¢ per gal
Ciders containing more than 7% absolute alcohol by volume (whether sparkling or not)	50¢ per gal
Ciders (additional excise taxes)	
Ciders containing not more than 7% absolute alcohol by volume	2½¢ per gal
Ciders containing more than 7% absolute alcohol by volume (whether sparkling or not)	5¢ per gal
Insurance premiums paid to British or foreign companies not authorized to transact business in Canada or to non-resident agents of authorized British or foreign companies	10% of net premium for property surety, fidelity and liability insurance. (Most other kinds of insurance are exempt.)

All the foregoing items, except insurance premiums, are also subject to the general sales tax of 12%. Cigarettes, cigars and tobacco are subject to additional taxes under the Excise Act (referred to as excise duties).

¹Special excise tax only applies on the amount by which the sale price or the duty-paid value of the clock or watch exceeds \$50.

²These taxes apply only to wines manufactured in Canada. The customs tariff on wines includes a levy on imported wines to correspond to the taxes on domestic production.

³These taxes apply to both domestic and imported wines.

⁴These taxes apply to both domestic and imported ciders.

Sources

- 20.1 - 20.8 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 20.9 - 20.12 Statistics Section, Systems and Planning Branch, Department of National Revenue, Taxation.
- 20.13 - 20.14 Business Finance Division, General Statistics Branch, Statistics Canada.
- 20.15 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 20.16 Federal-Provincial Relations Division, Department of Finance.
- 20.17 - 20.23 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 20.24 - 20.25 Personal, Commodity and Estate Tax Division, Department of Finance.

Chapter 21

Selected economic indicators

In this chapter various statistical statements and studies are presented in which broad areas of Canadian economic activity are covered in a comprehensive but summary form. The chapter is based on the Canadian System of National Accounts (SNA) which consists of national income and expenditure accounts, indexes of real domestic product, the balance of international payments and financial flows. Input-output tables are also part of the System of National Accounts but have not been included in this analysis. The integrated aggregative economic accounts provide an interrelated framework for analysis of the Canadian economy and its relationship with other countries. In its broad outline, the Canadian System of National Accounts bears a close relationship to the international standard as described in the United Nations publication *A system of national accounts*. To complete the economic picture a section on price indexes is also included.

21.1 National income and expenditure

National income and expenditure accounts provide accounting summaries for the nation as a whole and portray economic activity in terms of transactions taking place between major groups of transactors, namely, governments, corporate and government business enterprises, persons and unincorporated businesses and non-residents. By combining and summarizing these operations into their various classes, information may be obtained on the functioning of the economy which is of particular interest to governments concerned with problems of unemployment, taxation and prices, and to businessmen concerned with programs of investment and marketing.

Tables 21.1 - 21.9 are based on the revised historical series of the national income and expenditure accounts. Annual coverage since 1926 is available in Statistics Canada occasional publication *Income and expenditure accounts, 1926 to 1973*, Catalogue No. 13-531.

National income. Net national income at factor cost measures the current earnings of Canadian factors of production (land, labour and capital) from productive activity. It includes wages and salaries, profits, interest, net rent and net income of farm and non-farm unincorporated business.

Gross national product (GNP), by totalling all costs arising in production, measures the market value of all final goods and services produced in the current period by Canadian factors of production. It is equal to national income plus net indirect taxes (indirect taxes less subsidies) plus capital consumption allowances and miscellaneous valuation adjustments.

Personal income is the sum of current receipts of income whether or not these receipts represent earnings from production. It includes transfer payments from government (such as family allowances, unemployment insurance benefits and war service gratuities) in addition to wages and salaries, net income of farm and non-farm unincorporated business, interest, dividends and net rental income of persons. It does not include undistributed profits of corporations and other elements of the national income not paid out to persons.

Gross national expenditure (GNE) measures the same aggregate as gross national product (i.e. total production of final goods and services at market prices) by tracing the disposition of production through final sales to persons, governments and business on capital account, including changes in inventories, and to non-residents (exports). Imports of goods and services, including payments of interest and dividends to non-residents, are deducted since the purpose is to measure only Canadian production.

21.1.1 Economic growth in 1974

Canada's gross national product in 1974 was \$140.9 billion, 17.0% higher than in 1973. The economy's growth in real terms (1971 dollars) was only 2.8%, after real growth rates of 6.9% in 1973, 6.0% in 1972 and 5.7% in 1971. Employment increased by an above-average 4.3% in 1974, after the record-breaking increase of 5.2% in 1973. Prices continued to escalate rapidly. The implicit price index for gross national expenditure rose by 13.8% after an increase

of 8.4% in 1973. The 1974 increase is the largest on record, outranking that of 1951, when pressures associated with the Korean War sent the index up 11.5%, and that of 1948 when prices rose by 12.2% because of postwar reconversion.

Most income and expenditure components showed remarkable increases: labour income 16.9%, corporation profits 27.2%, interest and miscellaneous investment income 33.1%, accrued net income of farm operators from farm production 19.0%, consumer expenditures on goods and services 15.2%, government current expenditure on goods and services 20.6%, business expenditures on plant and equipment 23.4%, exports of goods and services 25.4% and imports on goods and services 31.2%. However, such increases largely reflected the current rate of inflation. A trade deficit of \$2,187 million was the largest on record.

In real terms, the weakness in the external sector of the economy offset much of the strength in the domestic sector. Final domestic demand increased by 5.2% in 1974, a deceleration from the 1973 growth rate of 7.5%, but in line with the average rate of growth over the past 25 years.

21.1.2 Consumer outlays

Current dollar consumer expenditure increased more than 15% in 1974; prices grew by 10.5%. The real increase of 4.2% in 1974 followed increases of 7.5% in 1973, 6.6% in 1972 and 5.7% in 1971.

Consumer spending on durables increased by 5.0% in real terms, after a 15.6% rate of increase in 1973. This sharp deceleration was because of a decline in sales of new passenger cars, and weakness in residential construction; sales of furniture and appliances slowed from 1973. Spending on semi-durables increased by 7.1% in real terms, and the over-all deceleration from 11.5% in 1973 was widely distributed among the components. Sales of non-durables increased by 4.9% in real terms compared to 5.7% in 1973; expenditures on food (the largest component) increased at the same rate as in 1973, while alcoholic beverages, gasoline and oil showed a deceleration. Real consumer spending on services increased 2.2% in 1974.

All major components of consumer expenditure experienced sharper price rises in 1974 than in 1973, but price increases were particularly strong in durable and semi-durable goods.

21.1.3 Investment

Real gross fixed capital formation was strong in 1974, despite a decline in the rate of investment in residential construction. Virtually all of the increase was due to business plant and equipment expansion, which continued the vigour of 1973 following six years of relatively weak investment. A steep 15.7% price increase was almost double the 1973 rate of 8.5%. The year-to-year changes in the components of business capital formation, in real terms, were as follows: residential construction, down 2.6%, non-residential construction, up 7.6%, machinery and equipment, up 8.1%. Although residential construction was only about 5% of total real gross national expenditure in 1974, its modest increase, after 8.8% growth in 1973, figured strongly in the slower growth in final domestic demand.

There was a sharp rise in non-farm business inventory investment, from \$1,081 million in 1973 to \$2,669 million in 1974. Both manufacturing and wholesale trade displayed strong increases.

21.1.4 The external sector

The trade deficit stood at \$2,187 million in 1974, up from \$319 million in 1973. The deterioration was mainly attributable to the balance on goods, which fell from a surplus of \$2,720 million to \$1,519 million. The deficit on services increased from \$3,039 million to \$3,706 million.

Export prices rose by nearly 30% in 1974, due to very sharp increases in the prices of wheat, petroleum and natural gas, wood pulp and newsprint, all metals and final manufactured goods. The increase of about 21% in import prices is accounted for by strong price rises in food, petroleum, chemicals, metals and by relatively strong increases in final manufactured products.

In real terms, exports declined by 3.8%. This decline was due to decreased exports of food, petroleum, lumber and auto parts, which were partially offset by increases in exports of wood pulp, newsprint, iron and steel, machinery and equipment, and motor vehicles.

Constant dollar imports were up 8.6% in 1974 due to increases in all major categories of manufactured goods. There was a decline in petroleum imports.

21.1.5 Incomes

Labour income increased by 16.9% in 1974, the largest annual rate of growth since 1951, and compared with an increase of 13.4% in 1973. The acceleration resulted largely from increases in average earnings. In 1974 the estimates were particularly affected by both a record number of man-days lost due to industrial disputes and record levels of retroactive wage payments and lump sum cost-of-living allowances.

Wages and salaries in the goods-producing industries advanced by 14.6% in 1974, after an increase of 13.2% in 1973. Within the goods-producing industries, wages and salaries in manufacturing and construction rose by similar rates, mainly reflecting significant increases in average earnings.

Wages and salaries in the service-producing industries rose by 17.7% in 1974, compared with an increase of 12.8% in 1973, in line with sharp gains in average earnings. The rate of increase accelerated notably in all industry groupings. Large retroactive payments and cost-of-living allowances in 1974 affected rates of increase in the transportation, communication and other utilities (18.2%), service (17.0%) and public administration (18.6%) industries.

The annual increase of 27.2% in corporation profits, although down from the 34.4% increase recorded in 1973, was still substantial. Profits in mining, manufacturing and trade all showed notable increases. Within manufacturing, the sharpest increases took place in the textile, paper, primary metals, metal fabricating, machinery, chemical, and petroleum and coal industries.

The inventory valuation adjustment, intended to remove from income those profits which do not reflect current production, increased from \$2,384 million in 1973 to \$4,264 million in 1974.

Accrued net income of farm operators from farm production rose by 19.0% in 1974, a sharp drop from the extraordinarily high rate of increase in 1973. The value of grain production, as in 1973, increased sharply, reflecting a further rise in prices, and was the main contributor to the total increase. Cash receipts from the sale of dairy products, fruits, vegetables and eggs, and government subsidy payments also rose sharply. The value of livestock production decreased slightly as prices levelled off or declined. Farm operating expenses increased at about the same rate as in 1973, further dampening the increase in farm income.

The rise in interest and miscellaneous investment income of 33.1% was due mainly to higher government royalties.

21.1.6 The government sector

Total expenditures of all levels of government combined, excluding intergovernmental transfers, rose by 23.5% in 1974. More than half of the increase took place in spending on current and capital goods and services. Current outlays on goods and services rose by 20.6% spread about equally at the federal, provincial and local levels. Transfer payments to persons increased by 22.5%, particularly at the federal level where higher rates led to a \$1 billion increase in family and youth allowances. Subsidies were more than doubled, mainly at the federal level and largely reflecting the introduction of payments to importers of crude oil and petroleum products and higher payments to the railways.

Total revenues of all levels of government combined increased by 25%. Reflecting the rise in personal income, personal direct taxes rose by 23%. Indirect taxes rose by an amount similar to the rise in personal direct taxes. Almost half of the increase resulted from revenues collected under the oil export tax and charge. All other revenue categories registered gains. Corporate direct taxes rose by 36%, in line with the sharp increase in corporation profits. The 25% increase in investment income was due largely to a sharp increase in royalties.

As a result of revenues rising more sharply than expenditures, the surplus, on a national account basis, of the government sector as a whole increased from \$1,193 million in 1973 to \$1,928 million in 1974.

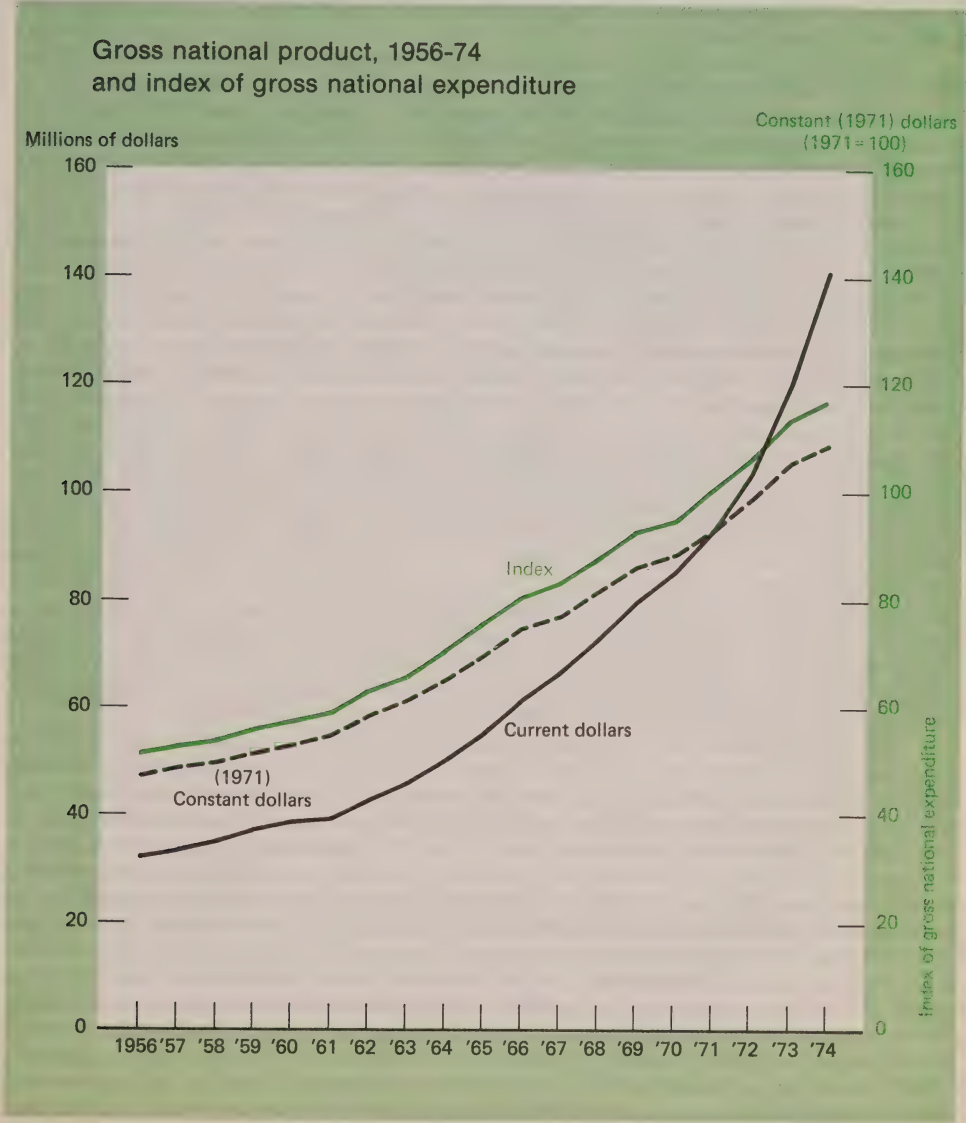
21.2 Domestic product by industry

21.2.1 Indexes of real domestic product

Since the early 1960s Statistics Canada has published a set of production data pertaining to the entire spectrum of Canadian industries in its full industry detail (including the index of

industrial production). These data, in the form of production indexes, are measures of value added for each industry revalued in the dollars of the base year. Technically, they are termed "indexes of real domestic product (RDP) at factor cost originating by industry". In constructing the index for total RDP, where the gross output of one industry flows to another industry (intermediate input) and/or to final demand (non-industrial sales), the portion double-counted has been eliminated. This is accomplished by subtracting the intermediate inputs (materials, fuels, advertising, etc.) valued in terms of the dollars of a common base year from the constant dollar value of the gross output to yield a constant dollar value added aggregate.

RDP indexes are published on an annual, quarterly and monthly basis. The monthly and quarterly data are published both seasonally adjusted and without seasonal adjustment. The seasonally adjusted data are considered to be preferable for the analysis of emerging trends as the strong seasonal fluctuations to which sub-annual data are frequently subject have been removed through the seasonal adjustment process, thus revealing the underlying trend as well



as the cyclical and irregular factors affecting the data. In general, the annual indexes are suitable for studies of production trends, growth rates and inter-industry comparisons, whereas monthly indexes provide a much better tool for the study of the cyclical behaviour of industries and short-term changes in production.

Spurred on by strong domestic and foreign demand for the goods and services produced by Canadian industries, total real output in the 1961-74 period achieved an average annual rate of gain of 5.6% in contrast to the average rate of growth of 4.7% in the 1946-61 period. Domestic demand has been influenced by demographic factors operating since World War II; younger age groups are displaying both their purchasing power and changing tastes. Buoyant foreign demand for Canadian commodities has been a dominant force since 1961, with sales of wheat and motor vehicles and parts having recorded the most dramatic gains. Within this period a generally healthy investment climate has prevailed. Both residential and non-residential construction made good gains. In the case of non-residential construction the rapid pace of activity peaked in 1966 and various inhibiting factors contributed to weakness in the industry into the early 1970s. Since 1971 the pace again increased, particularly in 1973, but slowed in 1974. The durable manufacturing sector was dynamic in response to both domestic and external demands.

The influx of the postwar generation is reflected in the rapid increase in the labour force. Over most of the period the expanding economy generated sufficient employment opportunities to adequately absorb these increases. In the latter part of the 1960s, this influx combined with slackness in the over-all economy to produce a lower rate of growth in labour force employment than in the labour force itself. By 1972, the trend had climaxed and by 1973 unemployment rates began to fall and continued at lower levels through most of 1974.

Real domestic product increased by 5.2% in 1972 following a rise of 5.9% in 1971. Further substantial growth occurred in 1973 when real domestic product rose by 6.9%. However, in 1974 the rate of growth slowed to 3.6% (Table 21.10).

Manufacturing, particularly durable goods manufacturing, has been a leading contributor to the growth of the Canadian economy over most of the period (Table 21.11). The burgeoning motor vehicles and motor vehicles parts industries have been prime movers in the rapid increase in the output of durables. A severe interruption in the strong upward trend in motor vehicle production occurred early in 1966 and persisted until the final quarter of 1966. It has been variously attributed to changes in the general economic conditions in North America and specifically to the 1966 credit squeeze and the upward climb of prices, combined with consumer concern about car safety. Since 1968 production has been hit, directly or indirectly, by strikes and parts shortages and in 1970 output declined markedly as a result of a slump in consumer spending compounded by the impact of the automobile strike in the latter part of that year. There was a strong recovery early in 1971 which raised the level for the year well above that for 1969. In 1972, 1973 and 1974 the industry continued to grow although at lower rates and in spite of some adverse influences. An interruption occurred in 1972 when a major producer altered its product lines. In 1973, production was affected by strikes in two important companies and in 1974 by a decline in consumer demand for durable goods. Canadian demand for automobiles was sustained despite reported shortages and rising prices for gasoline; sales by motor vehicle dealers increased strongly in 1973 but only slightly in 1974.

The performance of the construction industry has been a conspicuous feature of the economy. Heavy injections of industrial capital took place in the mid-1960s to develop additional facilities or expand capacity. Pace setters were such industries as petroleum and coal products, chemicals, pulp and paper, and electric power. Outlays for social capital such as hospitals and educational institutions also increased. Construction projects for Canada's Centennial and Expo 67 provided an extra stimulus. However, since 1967, tightened monetary conditions, rising costs, a mid-1969 decision to defer capital cost allowances on commercial projects in some areas and strikes in 1969, 1970, 1972 and 1974 all restrained output in this sector. Residential construction tends to be one of the more volatile sectors of the economy. The relevant demographic factors have indicated that a solid demand for housing exists. However, less favourable supply conditions such as scarcity of mortgage funds and rising interest rates and construction costs have from time to time adversely affected residential construction, particularly in 1966, the latter half of 1969 and the first half of 1970. Strikes in 1970 and, to a lesser extent in 1972, exacerbated the situation. However, both private and public mortgage funds had become increasingly available from the latter part of 1970 until

mid-1974. This impetus contributed to continuing growth in construction and other sectors of the economy in 1971, 1972 and 1973. However, in 1974 the construction industry declined, especially in the residential sector, and was a major contributor to the weakness in real domestic product.

The community, business and personal services group has grown at a fairly steady pace in the past decade tending to be relatively insensitive to short-term fluctuations and has thus been one of the sustaining forces in the economy. Health and welfare, services to business management and miscellaneous services have been prime contributors since 1968. In 1970 and 1974 the rate of increase in output of this industry group outstripped that of the aggregate output of the economy.

In summary, since the end of 1970 total production has increased strongly. At the aggregate level there was renewed strength in domestic demand. External demand was also very strong in the 1971 to 1973 period and resulted in a rapid advance in the volume of merchandise exports. However, there was a decline in exports in 1974 traceable to reduced exports of foods, petroleum, lumber and auto parts. In 1974 the service-producing industries accounted for the greater part of the change in aggregate real domestic product, led by wholesale trade, finance, insurance and real estate, and transportation. In 1973 the goods-producing industries had been dominant.

The decrease in trade in 1974 was in the retail sector. Within retail trade there was a slackening in demand for the goods and services of department stores, motor vehicle dealers, and furniture, television, radio and appliance stores. Reduced demand also affected automotive parts and household electrical appliances in wholesale trade. The over-all growth of the manufacturing industries exceeded the growth of the service-producing industries in 1972 and 1973 but fell below in 1974 as a result of the weakening demand for goods. The changes in manufacturing were fairly evenly distributed between the durable and non-durable goods sectors, although the rate of growth tended to be slightly higher for durables. A burst of activity in residential construction in 1971 had led to a 23% advance in housing starts. This was followed by gains of 7% in 1972 and 1973. But in 1974 they were down by 17%. The fall in residential construction activity affected the production of building materials and household appliances, as reflected in the decline in such manufacturing industries as wood products, concrete products, cement and major appliances.

21.2.2 Value added for goods-producing industries

The data contained in this Section are published in Statistics Canada's report *Survey of production* (Catalogue No. 61-202). The scope of the report is limited to current dollars and to industries engaged chiefly in the production of goods. This is in contrast to the real domestic product series which encompasses all industries and revalues current production in terms of the prices (dollars) of a base year.

Tables 21.12 and 21.13 give "census value added" production data classified by province and industry, respectively, on a primary activity basis. Census value added is derived by deducting the cost of materials from the gross value of production (excluding excise and other sales taxes) or revenue. The Standard Industrial Classification of establishments is the basis of classification used. Current dollar census value added in the goods-producing industries increased by 20.8% in 1973 compared with 11.4% in 1972 and 9.9% in 1971.

21.2.3 Aggregate productivity trends

The level of, and changes in, productivity have a vital influence on economic growth, over-all cost structure, international competitiveness and, in the final analysis, on the quality of life. In the measurement of productivity, output is related to one or more kinds of inputs utilized in the production process.

The measures of productivity presented here relate output to a single input only, namely labour time. It must be emphasized that changes in output per unit of labour input cannot be attributed directly and solely to labour; such measures reflect not only changes in the skills and effort of the labour force but also the contribution of other productive resources with which labour works as well as the effectiveness with which all are combined and organized for the purpose of production. In other words, changes in technology, capital investment, capacity utilization, work flow, managerial skills and labour-management relations each have a bearing on movements in what is termed "labour productivity". The measures of unit labour cost are the ratios of labour compensation to output. Unit labour cost can also be obtained as the ratio

of average compensation to productivity; thus unit labour cost will increase when average compensation grows more rapidly than productivity.

Sources of data. The output components of the various indexes of output per unit of labour input and unit labour cost referred to here are the indexes of "real domestic product (RDP) by industry". These indexes, which were developed within the conceptual framework of the Canadian System of National Accounts, measure in constant dollar terms the contribution of each component industry to total output.

The major sources for the employment and man-hour indexes were the monthly labour force and employment surveys and these were supplemented by data from such sources as the annual censuses of manufactures and mining and the decennial census of population. Since the data from these diverse sources varied considerably in their coverage, concepts and methods of compilation, care had to be exercised in selection, adaptation and combination of the data into aggregate measures of labour input which would be conceptually and statistically consistent, both internally and in relation to the output data. Labour force survey data were used for the paid worker estimates of agriculture and of fishing and trapping while those for manufacturing and mining were based on adjusted annual census data. Estimates for most of the remaining industry divisions were derived from employment survey data. Estimates of other than paid workers (own-account workers, employers and unpaid family workers) were derived mainly from the labour force survey. Estimates of average hours worked, which were needed for the indexes of output per man-hour, were also based on labour force survey data except in the case of manufacturing where man-hours data reported in the census of manufactures were also utilized. Labour compensation is the sum of wages, salaries, supplementary labour income and an imputed labour income for self-employed workers. For imputed labour income the average hourly income of paid workers is attributed to self-employed persons in the same industry division. Indexes of output per person employed, output per man-hour and unit labour cost for commercial industries and the major components are presented in Table 21.14.

Growth rates. Between 1961 and 1974, output per person employed in the commercial industries increased at an annual average rate of 3.3%. Output per man-hour increased more rapidly, 4.1% a year, reflecting reductions in the average work week (Table 21.14). On reviewing the years since 1961 a decline in the rate of productivity growth can be observed. Output per man-hour increased at an average annual rate of 4.5% for the years 1961-66, 4.4% for the years 1966-71 and 1.8% for the years 1971-74.

Productivity growth in the commercial service-producing industries continued to lag behind the comparable rate of increase in the commercial goods-producing industries. From 1961 to 1974, the average annual rate of increase in output per man-hour was 3.0% in the commercial service sector and 5.0% in the commercial goods sector. In manufacturing, from 1961-74, output per man-hour rose 4.1% per annum.

Unit labour cost for commercial industries increased at an average annual rate of 1.0% for the period 1961-66, 3.6% for the years 1966-71 and 7.8% between 1971-74.

21.3 Price indexes

The price indexes provided here are classified into price indexes of goods and services paid by consumers at the retail level; manufacturers' selling price indexes of goods and services; purchase price indexes of selected capital goods; farm input price indexes; and securities price indexes.

21.3.1 Retail price indexes

This Section describes price indexes currently available for commodities purchased by consumers at the retail level.

Consumer price index. The consumer price index measures the movement from month to month in retail prices of goods and services bought by a representative cross-section of the Canadian urban population. It is a base-weighted index, measuring the effect of changing prices on the cost of purchasing a fixed basket. The basket on which the index was based from 1961 to April 1973 relates to 1957 family spending patterns. Since April 1973, the index has been based on the 1967 expenditure pattern of families ranging in size from two to six

persons, with annual incomes of \$4,000 to \$12,000, living in urban centres with metropolitan populations exceeding 30,000.

The movement of the consumer price index (CPI) during the period 1961-73 is described in previous editions of the *Canada Year Book*. Between 1973 and 1974 the rate of change in the CPI, as measured by calculating the difference between annual average indexes, accelerated to 10.9% compared to an average year-to-year change in the previous five years of 4.6%. On the basis of this movement in consumer prices, the purchasing power of the consumer dollar declined from 66 cents in 1973 to 60 cents in 1974 relative to \$1.00 in 1961.

All major index components experienced increases from 1973 to 1974 with the most pronounced being for food, followed by transportation and clothing. Food prices, which rose by 16.3%, accounted for approximately two fifths of the rise in the CPI between these two years; this constituted the largest year-to-year food price increase since 1948. Food eaten away from home, fresh milk, bread, beef and sugar were the items most responsible for this increase. Table 21.15 provides a summary of the major component and all-items indexes for the period 1965 to 1974. In this summary, the index items are grouped according to broad categories of consumption.

Consumer price movements categorized by type of goods and services offer another perspective of the incidence of price change (see Table 21.16). From 1973 to 1974, the price index of goods increased 12.6% compared to an average yearly increase of 4.1% for the five preceding years. This rise was mainly attributable to food although the indexes for non-durable and semi-durable goods also recorded very significant advances with increases of 14.5% and 9.5%, respectively. The services price index increased 7.9% between these two years compared to a yearly average increase of 5.7% in the five previous year-to-year periods.

For detail on movements in the CPI, see *Consumer price index* (Statistics Canada Catalogue No. 62-001) or *Prices and price indexes* (Statistics Canada Catalogue No. 62-002).

For additional information on methodology and weighting patterns, see *The consumer price index for Canada (1961=100) (revision based on 1967 expenditures)* (Statistics Canada Catalogue No. 62-539).

Table 21.17 presents regional consumer prices for 12 cities or city combinations. These indexes measure percentage changes in retail prices over time, in each city or city combination, of a fixed basket of goods and services representing the level of consumption of a particular group of families. In order to place movements in Canadian retail prices in perspective they may be compared with price changes occurring elsewhere in the world. This is done in Table 21.18 which indicates the percentage changes over the previous year in the consumer price index for each country specified. For purposes of this comparison, countries are listed alphabetically, by region.

Intercity consumer price indexes. Table 21.19 provides indexes that compare levels of prices among 11 major Canadian cities. These indexes express prices in each city as a percentage of the combined cities average which equals 100. The comparisons shown are those in effect as of December 1973 for four commodity groupings and May 1971 for the remaining three categories. The selected commodity groupings in the Table make up about three quarters of the average urban consumer's budget. For technical reasons, shelter costs (for both rented and owned facilities) and restaurant meals, are not included in the comparisons.

The retail prices used for the intercity comparisons are largely those routinely collected in each city for the production of the consumer price index with the exception of the food for home consumption component which contains data from a special survey undertaken in May 1971. Comparability between cities was achieved, as far as possible, by matching quotations for similar qualities of goods and services and types of retail outlets. Since comparisons relate to prices that include sales and excise taxes, variations between provinces in the scale of such taxes imposed on a wide range of non-food commodities can be of significance in explaining intercity price differentials.

21.3.2 Industrial commodity price indexes

These relate to sales and purchases, at levels other than retail, of raw materials, semi-processed goods and manufactured products. They are constructed in two ways: on an industry basis, in which the indexes are prepared for individual industries and aggregated for groups of industries; and on a commodity basis, in which indexes are prepared for individual

commodities and aggregated for groups of commodities. "Industry selling price indexes" for manufacturing industries are the principal industry-classified indexes available in Canada. The "general wholesale index" is a commodity-classified index.

Industry selling price indexes (manufacturing). Indexes of the selling prices of some 100 individual industries classified to manufacturing in the Standard Industrial Classification are produced and published monthly. In addition, indexes are available for major groups of manufacturing industries and, on a gross-weighted basis, for all manufacturing.

The indexes measure the change through time of prices received by manufacturers for their products. Prices reflected in the index are f.o.b. manufacturing establishment, excluding taxes levied on manufacturers' sales. The items and weights in the current indexes are based on manufacturers' shipments in 1961. The composite gross-weighted index for manufacturing is presented in Table 21.20, for the years 1963-74.

The general wholesale index includes mainly manufacturers' prices but also incorporates prices of wholesalers, assemblers of primary products, and agents and operators of other types of commercial enterprises which trade in commodities of a type, or in quantities, characteristic of primary marketing functions. Prices are grouped according to a commodity classification scheme based on chief component material similarities. Indexes classified according to degree of manufacture are also available. In Table 21.21, the general wholesale index is presented for the period 1951-74. This index is used as a conventional summary figure against which to observe the behaviour of particular price groups such as farm products, raw materials and building materials, for which separate price indexes have been constructed.

World wholesale price indexes. Comparisons of Canadian wholesale price indexes with those of other countries for the years 1972-74 are given in Table 21.22.

21.3.3 Price indexes of selected capital goods

This Section covers price indexes currently available for inputs into residential and non-residential building construction, completed new houses, engineering construction, and machinery and equipment purchased by the construction and forestry industries.

Residential and non-residential building construction indexes. Price indexes of residential and non-residential building construction are base-weighted input indexes of materials and labour. They are presented in Table 21.23 for the years 1965-74. The indexes for residential construction are published in more detail in Table 21.24 on a 1971 base. Indexes are available for the total inputs of material and labour for five regions within Canada, and are also calculated for the inputs into individual trades in residential construction.

Since the building material prices in these indexes reflect price movements on purchasers' markets they contain sales tax changes. The wage rate component, from 1971 forward, is derived mainly from surveys of agreements conducted by the Canadian Construction Association for construction trades in various centres; these are base rates which reflect union scale or collective agreements. The combined indexes of materials and wage rates do not necessarily reflect changes in the price of construction output since they do not take account of changes in profit margins or in productivity but instead concentrate only on the prices of the inputs.

New housing price indexes. These are base-weighted Laspeyres type indexes of builders' selling prices, measuring pure price change for work put-in-place and land for new residential construction. Monthly market selling prices agreed between builder and buyer in purchase contracts are reported monthly. In the price sample are major builders who construct 100 or more housing units a year (or possibly fewer units if comparable models can be priced through time). Prices cover dwelling structure, land and services to land if these are not provided separately by municipality; they exclude legal fees, provincial land transfer tax and similar costs to buyer for property acquisition. Prices are for single unit houses except in Toronto and Ottawa where single, semi-detached and row condominium units are priced.

The index uses a base-weighted (Laspeyres) formula. Weights reflect the relative importance of individual models in a firm's total output, and the relative importance of individual companies in the single family housing market, in 1971. New firms brought into the sample are assigned weights reflecting their importance at time of entry. Quality changes not reflected in the index include model substitutions, changes in size and location of building lots, design and construction techniques and provision of such extra features as appliances. When

actual cost data are not available quality changes are assumed to be proportional to differences in selling prices at a selected point in time. Indexes for the periods covered are shown in Table 21.25.

Highway construction indexes. These relate to prices paid by provincial governments in contracts awarded for highway construction. They are base-weighted indexes and measure the effect of price change on the cost of specified new highway construction projects represented by contracts of approximately \$50,000 or more awarded by provincial governments. Indexes for the period 1964-73 are given in Table 21.26.

Prices contained in the index are for units of construction work put in place, such as a cubic yard of earth excavation or a ton of bituminous hot-mix paving. Also included are prices of some materials, such as culvert pipe, usually supplied to the contractor by the highways department. *Prices and price indexes* (Catalogue No. 62-002) for December 1967 contains details of the problems of estimating price change for highway construction.

Electrical utility construction indexes. The price indexes of electrical utility construction, which include those of distribution systems, transmission lines, transformer stations and hydro-electric generating stations, give an estimate of the impact of price change on the cost of materials, labour and equipment used in constructing and equipping electrical utilities. The index provides an estimate of how much more, or less, it would cost to reproduce the base-period program of construction in another period using the same construction technology and assuming similar rates of profit and productivity. Price indexes for the years 1965-74 are presented in Table 21.27.

Price indexes of machinery and equipment. Table 21.28 shows base-weighted price indexes of machinery and equipment purchased by the construction and by the forestry industries. Prices used for the indexes are, for the most part, selling prices reported monthly by manufacturers, although in some cases distributors' prices are used. Prices of imported machinery and equipment are included in the index, represented either by commodity price indexes of the US Bureau of Labor Statistics or by prices collected directly from foreign manufacturers. All prices have been adjusted as relevant to include duty, exchange and federal sales tax.

21.3.4 Farm input price indexes

Farm input price indexes measure, through time, changes in prices of commodities and services used as inputs into the agriculture industry. The weights for the indexes are based on the 1958 Farm Income and Expenditure Survey. The time base is 1961 = 100. Indexes for 41 series are published quarterly for eastern, western and total Canada. Annual averages for the total index are provided from 1965 to 1974 in Table 21.29.

21.3.5 Security price indexes

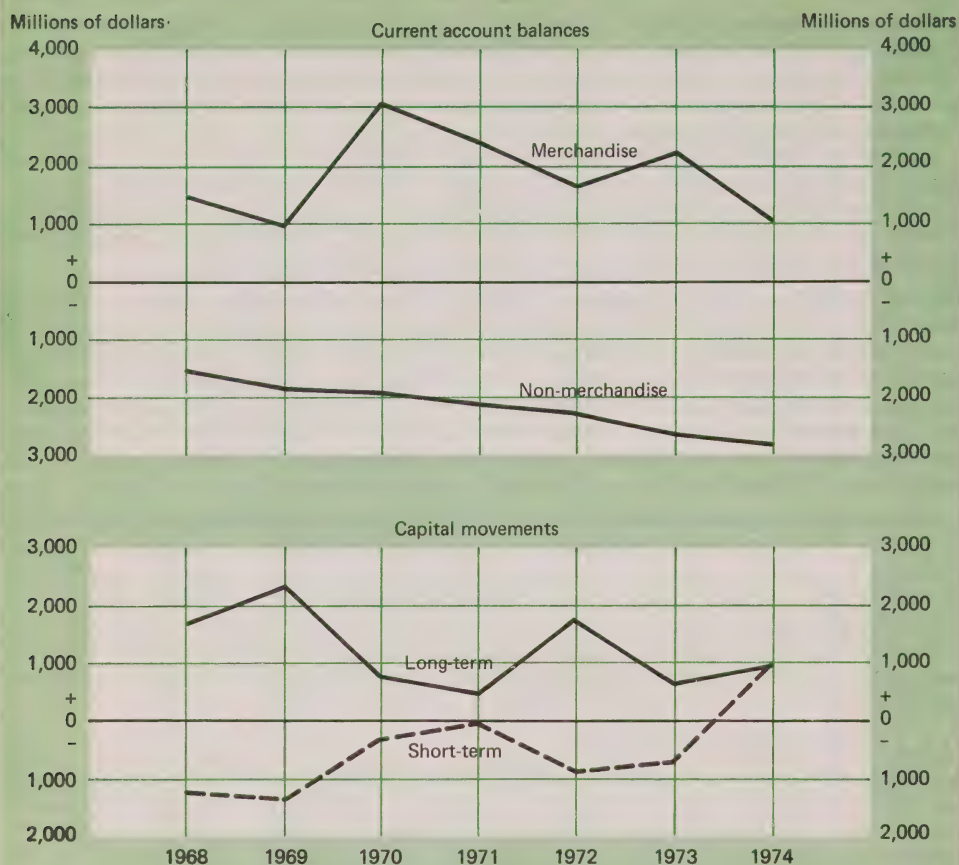
Security price indexes measure, through time, the effect of price change on the value of a portfolio consisting of high quality as opposed to more speculative stocks. The portfolio represents stocks of Canadian companies listed on the major Canadian stock exchanges. In the case of the mining index, eligible issues are for producing mines only. The indexes in Table 21.30 express current prices as a percentage of prices in 1961.

21.4 Balance of international payments

The Canadian balance of international payments summarizes transactions between residents of Canada and those of the rest of the world. Current account transactions, which measure the flow of goods and services between Canada and other countries, are included, with minor adjustments, as a component of gross national expenditure. Capital account transactions between residents and non-residents are included in the financial flow accounts. A summary of the Canadian balance of international payments is provided in Table 21.31 for 1968-74. Table 21.32 contains some additional information on current account transactions during that period and details of the Canadian balance of international payments for 1973-74 are presented in Table 21.33.

International conditions. In 1974 many developed countries experienced a reduction in economic tempo as they tried to cope, at one and the same time, with the problems of inflation and recession. These difficulties were exacerbated by the disequilibrating effects on their

Balance of international payments, 1968-74



current account positions of the quadrupling of crude petroleum prices. The financing of these deficits was linked to the recycling of the increases in reserves accumulated by oil exporting countries which introduced a new dimension to the continuing efforts to reform the international monetary system undertaken by the International Monetary Fund (IMF). Some constraint in foreign exchange markets was evident in the middle of the year as there were a number of failures or near failures of some European and United States banks associated with speculation in foreign exchange trading. This encouraged the placement of petrodollars in only the largest and most stable Euro-banks and directly in banks resident in the United States.

Both long- and short-term interest rates rose to extremely high levels. In Canada rates were generally above those abroad so that Canadian borrowers found it profitable to finance a significant proportion of their needs in foreign capital markets. Toward the end of the year short-term rates started to fall, especially in the United States, as the authorities increased the monetary aggregates to combat recessionary influences.

21.4.1 Current account

International transactions in goods, services and unilateral transfers between Canada and the rest of the world resulted in a current account deficit of \$1,877 million in 1974, up considerably from the \$425 million deficit recorded in 1973. This development was largely

attributable to a sharp contraction in the merchandise trade balance, the surplus on which declined by more than a billion dollars.

During 1974 the total value of merchandise exports rose to nearly \$32.5 billion, an increase of 27% over 1973. Merchandise imports, however, advanced at a more rapid pace, rising by 35% to almost \$31.5 billion. The resultant trade surplus of \$1,020 million was less than half the \$2,231 million surplus recorded in 1973. Excluding trade in crude petroleum, the balance was in surplus by only \$100 million, compared with a \$1.6 billion surplus a year earlier. The rise in the value of exports was the result of price increases as the physical volume of exports declined. While there was some increase in the physical volume of imports, price increases were the major factor in the substantial increase in total value.

Crude petroleum was a major contributor to the rise in the exports and imports, accounting for 29% of the advance in exports and 21% in imports with the balance on trade amounting to a surplus of \$920 million in 1974, up from \$616 million a year earlier.

Substantial increases were also recorded for exports of wheat, wood pulp, newsprint, and petroleum and coal products. While the volume of wheat shipments declined in 1974, a substantial rise in prices resulted in an export gain of almost \$900 million for this commodity. An advance of about \$250 million was recorded on automotive exports. Partially offsetting these increases, there was a substantial reduction in lumber exports of more than \$300 million.

Apart from crude petroleum, the advance in imports was paced by higher purchases of automotive products, fabricated steel, raw sugar, plastics, organic chemicals and other transportation equipment. Imports of automobiles and automotive products increased by more than \$850 million. This strong rise in automotive imports led to an enlarged deficit on automotive trade of about \$1.3 billion, almost twice as large as the deficit of the previous year.

The non-merchandise deficit of \$2,897 million was \$241 million higher than in 1973. Net payments in respect of service transactions rose by \$489 million to \$3,505 million, partly offset by a \$248 million increase in net transfer receipts of \$608 million. The expansion in the services deficit was largely due to the enlarged deficits recorded on "other services" and interest and dividends. "Other service" transactions, which is composed of government transactions, miscellaneous income and business services, resulted in a deficit of \$1,097 million, up \$213 million from 1973. Net payments of miscellaneous income accounted for the larger part of this increase. The deficit balance on interest and dividends, which is the major contributor to the over-all services deficit, rose by \$148 million to \$1,492 million. A substantial increase in receipts of immigrants' funds, in line with the sharp rise in the number of immigrants entering Canada during 1974, was the major factor accounting for the enlarged surplus on unilateral transfers. Official contributions to developing countries rose by 30% to \$332 million.

21.4.2 Capital movements

Capital movements between Canada and other countries resulted in 1974 in a substantial net inflow of \$1,901 million, following a small net outflow of \$42 million in 1973. Inflows of capital in long-term forms rose, on balance, by almost \$300 million to \$944 million while the net short-term capital inflow was \$957 million, a swing of \$1,650 million from the net outflow recorded in 1973. The net capital inflow together with the current account deficit of \$1,877 million accounted for a net increase of \$24 million in Canada's net official monetary assets.

Direct investment. Net inflows for foreign direct investment in Canada amounted to some \$435 million in 1974 of which more than 95% came from the United States. The annual inflow was down sharply from \$720 million in the previous year, and constituted the lowest annual inflow since 1964. Although broad-based, the decline in direct investment inflows was especially marked in the petroleum and natural gas sector.

Takeovers of foreign concerns by Canadian-based enterprises had a substantial impact on Canadian direct investment abroad in 1974, playing a significant role in boosting net outflows to a record \$645 million. Slightly more than 55% of direct investment outflows were to the United States, and almost 40% to overseas countries outside Europe and Japan. Canadian mining concerns were responsible for somewhat less than half of all Canadian direct investment outflows, with financial enterprises next with almost 20% of the total.

Security transactions. Portfolio transactions gave rise to a net inflow of \$1,905 million, the largest annual inflow recorded by this series which has been compiled since 1927. Sales to non-

residents of new Canadian issues reached a new high of \$2,437 million while retirements were \$485 million, the lowest level recorded since 1969. However, trading in outstanding Canadian securities resulted in a net capital outflow of \$72 million, a swing of \$79 million from the previous year's net inflow of \$7 million. Transactions in foreign securities produced a net inflow of \$25 million. Sales in Canada of new foreign securities amounted to \$26 million, retirements of foreign securities held by Canadians were estimated at \$12 million, and transactions in outstanding foreign securities resulted in a net inflow of \$39 million.

Long-term interest rates in Canada in 1974 increased more sharply than in either the United States or Europe providing an incentive for borrowers to seek funds abroad. Moreover, the attractiveness to foreign investors of certain Canadian issues was increased by the upgrading during 1974 of the credit rating of a number of Canadian borrowers. The Government of Canada and the provinces of Ontario, Manitoba and Quebec all received improved credit ratings from the influential Moody's Investors Service Inc. of the US.

Approximately 70% of new bond issues were denominated in United States dollars. About 27% of new issues, or \$647 million were denominated in Canadian dollars compared with 15% or \$210 million in 1973. The increase was a result of several large issues placed abroad being denominated in Canadian dollars. In previous years, sales to non-residents of Canadian pay issues largely occurred through non-residents buying a part of an issue placed in the Canadian market.

About three quarters of new Canadian issues were sold to United States residents. Over 17% of gross new issues were sold to residents of countries other than the United States, United Kingdom and continental Europe. This is in contrast to 1973 when only 1% of new issues had been sold to these countries. This large increase was mainly due to sales, particularly of provincial guaranteed issues, to Middle East nations.

Other capital flows in long-term forms. Assistance abroad by the Canadian government consists largely of payments of regular assessments to the international organizations of which Canada is a member, official contributions, intergovernmental loans, subscriptions to the capital of investment agencies and the extension of export credits. Assessments and contributions both form a part of Canada's payments on current account, while other transactions, to the extent that they give rise to claims on non-residents, are mainly reflected in capital movements in long-term forms. Aid to oil importing countries provided through the International Monetary Fund is, however, included in Canada's international reserves and does not appear in the capital account.

Development assistance outflows in the form of soft loans, advances and subscriptions from the Canadian government to developing countries and international development agencies totalled \$348 million during the year.

Repayments on outstanding postwar loans to European countries resulted in an inflow of \$37 million, down \$5 million from the inflow recorded in the previous year.

Transactions arising from the financing of medium- and long-term credits extended directly or indirectly at the risk of the Canadian government led to a net capital outflow of \$589 million, with grain export financing accounting for 53%.

Other capital movements in long-term forms, which include bank and other long-term loans, mortgage investments and movements of insurance funds, led to net inflows of \$149 million for the year.

Capital movements in short-term forms gave rise to a net inflow of \$957 million, the highest net annual inflow ever recorded for this item and the first annual net inflow since 1965. The major components of the 1974 inflow were a decrease of \$1,565 million in non-bank holdings by Canadians of foreign currencies abroad (largely offset by an increase of \$1,354 million in the net foreign currency claims position of Canadian chartered banks on non-residents) and an increase of \$592 million in non-resident holdings of Canadian dollar deposits.

Holdings by international agencies of Government of Canada demand notes increased, leading to a net capital inflow of \$45 million for the year. These non-interest bearing, non-negotiable notes are issued as part of Government of Canada loans and subscriptions to international agencies and are encashed by the recipients as funds are required.

Trading with non-residents in money market instruments (Government of Canada treasury bills, commercial paper, finance company paper and other short-term paper) resulted in a net inflow of \$79 million in 1974, down from the \$115 million net inflow recorded in 1973.

There were net inflows of \$79 million from trading in Government of Canada treasury bills, \$9 million from commercial paper, and \$63 million from finance company paper. Trading in other short-term paper resulted in a net outflow of \$72 million.

Transactions in other finance company obligations, which are made up of borrowings from non-resident banks and non-resident parent companies, resulted in a net inflow of \$170 million in 1974; this represented an increase of \$153 million over 1973.

All other short-term capital transactions (including the balancing item, representing unidentified transactions in both the current and capital accounts) led to a net capital outflow of \$140 million for the year as a whole. The balancing item as currently indicated, amounted to a debit entry of over \$350 million for the year as a whole.

21.4.3 Official international monetary assets and liabilities

Canada's international reserves increased by US\$57 million during 1974 to reach US\$5,825 million at the end of the year. This change represented, in addition to an increase of US\$31 million due to the appreciation in the United States dollar value of the Special Drawing Right (SDR), a net increase of US\$26 million from transactions passing through the reserve accounts.

The increase in Canada's reserve position in the IMF was mainly due to drawings on the IMF's new oil facility which was established in August 1974. These arrangements enable the IMF to borrow, in the period up to December 31, 1975, resources from a small number of member countries, including Canada. The funds are used to assist members with balance of payments needs in meeting the impact of increases in the import costs of petroleum and petroleum products. Canada has agreed to lend the SDR equivalent of up to \$300 million in Canadian dollars under this facility. During 1974 Canada lent SDR 140.7 million, equivalent to Canadian \$166 million.

The provision of these funds does not necessarily give rise immediately to a balance of payments entry as Canada's assets and liabilities both rise by equal amounts. The drawing of the funds by International Monetary Fund member countries does, however, increase Canada's reserve position in the Fund as Canada's liabilities to it fall.

Since July 1, 1974, the SDR has been valued by the IMF in terms of a basket of currencies of 16 countries, including Canada. Relative weights for each currency are broadly proportionate to the country's exports, but are modified to recognize that the share in trade does not necessarily give an adequate measure of a currency's weight in the world economy. The Canadian dollar accounts for 6% of the total weight.

The Canadian dollar value of an SDR can be determined by valuing each of the currency components of the SDR at its market value against the Canadian dollar. The sum of the Canadian dollar equivalent of each component would then yield the rate for the SDR in terms of the Canadian dollar. In practice this is done by calculating the value of the SDR in terms of the United States dollar and subsequently deriving a rate for the SDR in terms of the Canadian dollar by using the United States dollar/Canadian dollar cross exchange rate. Changes in the value of the Canadian dollar vis-à-vis the SDR can be used as a proxy for its effective change vis-à-vis all other currencies.

21.5 Canada's international investment position

Canada has been among the world's largest importers of capital as the demand for real resources from abroad has been associated with a pattern of consistent current account deficits and net inflows of capital. This pattern was interrupted by sizable current account surpluses in 1970 and 1971 and then a much smaller one in 1973. In addition to capital inflows, which are a counterpart to net deficits on the current account, undistributed earnings of foreign-owned branches and subsidiaries have also been a significant factor. These two sources of funds have helped capital formation in Canada and have contributed to the rapid growth in production, earnings and employment.

Canada's balance of international indebtedness rose by \$0.6 billion to \$29.1 billion in 1971 (Table 21.34), the last year for which complete data are available. The net indebtedness of Canada to investors in other countries has shown an almost uninterrupted growth from its postwar low of \$4.0 billion in 1949. Gross assets grew by 10% to \$25.8 billion during 1971 while gross liabilities increased more moderately at 5% to \$54.9 billion. The term balance of international indebtedness is used here, in a balance of payments context, to include equity

investment and contractual borrowing. It is determined by comparing Canada's outstanding claims against other countries with the outstanding obligations of Canadians to other countries. The totals of international claims and obligations which have been acquired over the years, arising from capital transactions and other factors, constitute the international assets and liabilities determining a country's international investment position.

21.5.1 Canadian assets abroad

There has been considerable growth in foreign investment in Canada and in the balance of Canadian indebtedness to non-residents, but Canadian assets abroad have risen at a faster rate than Canada's external liabilities and now represent 47% of liabilities abroad compared with 26% in 1939. This development was accompanied by a change in the structure of Canada's assets abroad (Table 21.35). The share of private long-term investment (including direct, portfolio, and miscellaneous investment) in Canada's foreign assets fell from almost 75% of the total in 1939 to about 41% in 1971. Canadian long-term investment abroad rose almost 8% to \$12,619 million during 1971. The bulk of Canadian long-term investment abroad is in the form of private capital, especially in the direct investment sector. The remainder consists mostly of government loans and advances and subscriptions to international investment agencies.

At the end of 1971 the total book value of Canadian long-term direct investment abroad in subsidiaries, controlled companies, affiliates and branches totalled \$6,534 million, an increase of \$346 million over 1970. At almost 6% the pace of increase in direct investment abroad was much slower than the advances of 13% for 1969 and 19% for 1970. The sharp rise in 1970 was influenced, however, by the reclassification of the foreign assets of a large enterprise from portfolio investment abroad to direct investment. Direct investment in United States firms rose \$137 million, the smallest increase in the last four years, to \$3,388 million, to account for 52% of Canada's direct investment at the end of 1971. Direct investment in the United Kingdom remained relatively static at \$590 million.

In the 1960s the share of direct investment in Canada's assets in the United Kingdom increased and now accounts for one third of the total. In other Commonwealth countries, direct investment has always been the predominant form of Canada's assets. Although at the end of 1971 direct investment accounted for over two thirds of Canada's long-term investments in these countries, its share was somewhat lower than in most of the previous years due to the expansion of Government of Canada credits made under the new international development or "soft" loan program. Direct investment, rising by 10% to \$1,713 million, continued to represent the largest part, at 48%, of Canada's assets in all other countries. However, export credits made directly or indirectly at the risk of the Government of Canada have grown significantly to represent an important element in Canada's assets in this group of countries. Miscellaneous investment, of which export credits is the largest component, rose by 52% to \$1,007 million.

Net official monetary assets, other Canadian short-term holdings of exchange and short-term receivables taken together have expanded to \$13.2 billion, to represent over one half of total assets at the end of 1971 (Table 21.34).

21.5.2 External liabilities

At the end of 1971 Canadian gross external liabilities amounted to \$54.9 billion. Non-resident owned long-term investment comprised 90% or \$49.4 billion of this total. Direct investment (investment in Canadian enterprises from the foreign country of control) grew by \$1.5 billion to \$27.9 billion from \$26.4 billion in 1970, accounting for 60% of all non-resident owned long-term investment in Canada. Non-resident holdings of government bonds increased marginally to \$8.0 billion while portfolio holdings of other Canadian securities rose by \$0.3 billion to \$7.2 billion.

Canada has typically been dependent on external sources of capital for its economic development. During the exceptional growth period that occurred before World War I, non-resident investment was very high and the main source of that investment was the United Kingdom. However, during the first part of the interwar period, the United States became the principal source of external capital and by 1926 the international debt owned in the United States exceeded that in the United Kingdom. After this date United States investment in Canada continued to increase, particularly during the boom in the petroleum industry after

1947. At the end of 1972, United States long-term investment in Canada at \$38.6 billion comprised about 77% of all non-resident long-term investment in Canada (Table 21.36). This was down, however, from the high of approximately 81% recorded in 1967. About 61% of the stock of US investment at 1972 year-end was direct while 19% or \$7.2 billion was invested in government bonds.

United Kingdom long-term investments in Canada totalled \$4.5 billion at the end of 1972. As a proportion of total non-resident investments in Canada, the United Kingdom's share was 9%, well below their 36% share at the end of 1939 before wartime repatriations. After reaching a low point in 1948, the value of United Kingdom investments in Canada increased each year until 1962. In 1963 repatriation of investments in railways, (in Canada) and further provincial takeovers of other utilities caused a slight decline. Since that time, however, United Kingdom investment in Canada has grown slightly.

Long-term investment by residents of countries other than the United States and the United Kingdom amounted to \$6.8 billion at the end of 1972. The growth rate of long-term investment from this source continued to outpace both the United States and the United Kingdom. They comprised just under 10% of total foreign long-term investment in 1968, 11.5% in 1970 and approximately 13.6% in 1972. About 46% of total long-term investment owned by residents of this group of countries was direct investment while government bonds comprised 27% of this total.

21.5.3 Foreign investment in Canadian industry

Foreign investment in Canadian industry is measured in terms of both the proportion of foreign-owned capital to long-term capital employed in selected industry groups and the proportion of total capital employed in non-resident controlled enterprises. The estimated book value of total long-term capital employed in non-financial enterprises rose to \$105 billion at the end of 1972, a steady annual increase of about 7% over the 1969-72 period. Foreign-owned investment as a percentage of this stock of capital dropped from 35% in 1970 to 34% in 1971 and 1972.

In the manufacturing sector, the degree of foreign ownership remained relatively stable at 53%. The proportion of foreign control, on the other hand, declined by three percentage points in 1971 to 58% of the total. Since 1969, the share of Canadian ownership of total investment in petroleum and natural gas has risen successively each year by two percentage points to reach 43% at the end of 1972. Over 60% of net new long-term capital invested in this industry during this period was sourced in Canada. In contrast, Canadian control of capital has declined to a low of 23% at 1971 year-end.

In the mining and smelting industry, the reclassification of The International Nickel Company of Canada, Limited to Canadian control caused a sharp decline in the percentage of foreign-controlled capital from 71% to 58% of total capital utilized in the industry. Foreign ownership also decreased, although much less dramatically, dropping from 59% to 56% over the 1970-72 period. Foreign control and ownership of capital employed in the railways and other public utilities remained at the relatively low levels typical of these sectors.

21.6 Financial flow accounts

Despite the increasing weakness in economic activity in 1974, the volume of funds channelled through Canadian capital markets reached a new record level during the year. Total borrowing by non-financial sectors of the economy through conventional credit market instruments (consumer credit, bank and other loans, short-term debt instruments, mortgages, bonds, stocks and foreign securities) rose from \$22.4 billion in 1973 to \$31.2 billion in 1974.

Reflecting the strong increase in plant and equipment outlays, and the large accumulation in inventories, the net financing requirements of non-financial private corporations in 1974 were about twice as large as during the previous year. The greater needs for external financing reflected also the slower rate of increase in internally generated funds; corporation profits, although showing a substantial increase over the year as a whole, fell considerably in the fourth quarter of the year, and did not keep pace with the fixed capital expenditures and the build-up in inventories.

Although reliance on long-term credit market instruments increased somewhat in 1974, a much larger proportion of the increase in funds raised by non-financial private corporations was obtained in short-term forms. A record amount of funds was raised through bank loans

(\$2.5 billion) and other loans (\$0.8 billion) during the year. The total amount of loans exceeded by about \$1 billion the 1973 level; borrowing by means of bank and other loans was particularly important in the first half of the year, but slackened appreciably in the last two quarters. The striking point in short-term borrowing is the return to the short-term commercial paper market. Total funds borrowed through this market amounted to \$0.9 billion in 1974, after a net reduction of \$238 million and \$12 million in 1972 and 1973, respectively. The return to commercial paper as a source of financing in 1974 reflected sensitivity to the differential between bank loan and commercial paper rates as competitive sources of funds. Total funds borrowed in the form of mortgages, bonds and stocks amounted to \$2.5 billion in 1974, up from \$2 billion registered in 1973. While there were substantial increases in net new issues of bonds and in mortgage debt, the net new issue of shares by this sector was reduced to \$0.8 billion from a net amount of \$1 billion in 1973.

The chartered banking system grew at about the same pace as in 1973. A strong increase of \$4.6 billion in financial assets in the last quarter brought the total to \$12.3 billion for the year, compared to \$12.1 billion in 1973.

Loan assets held by the chartered banks increased by \$5.9 billion in 1974, compared with \$5.1 billion in 1973. Although the rate of growth of the banks' Canadian dollar loans moderated in 1974, this effect was more than offset by the increase in foreign currency loans granted to Canadian residents, particularly in the first three quarters of the year; these foreign currency loans were financed by a large increase in foreign currency deposits in the first two quarters of 1974. The banks' share in the market for consumer credit continued to increase in 1974 despite a noticeable slowing in consumer demand for durable goods since the second quarter of the year; the net increase in the banks' consumer loans amounted to \$1.9 billion in 1974, compared to \$1.7 billion in 1973. The high level of consumer loans granted by the banks was in part at the expense of other lenders in that market. The banks net mortgage investment increased at the same rate as in 1973 despite the decline in mortgage loan approvals in the second half of 1974 which was reflected in lower activity in the mortgage market during this period. Following a large reduction of about \$0.5 billion in holdings of bonds in 1973, the chartered banks directed near \$1 billion into that market in 1974.

The rate of growth of chartered banks' deposits recorded little change in 1974, despite an important reduction of \$908 million in foreign currency deposits in the second half of the year. The reduction in foreign currency deposits appears to have resulted from a shift by depositors into short-term Canadian dollar deposits as rates paid on these deposits became relatively more attractive, particularly in the latter part of the year; furthermore, the decrease in swap deposits may also have been caused by an important swing to a discount on the forward Canadian dollar during the fourth quarter. Canadian dollar deposits, on the other hand, increased by a sizable \$10 billion in 1974, compared to \$6.9 billion in 1973. The banks were particularly successful in attracting large amounts of funds into non-chequable savings and fixed-term deposits in 1974, but demand deposits remained relatively stable over the year as a whole. More than half the annual increase in total Canadian dollar deposits took place in the fourth quarter, and reflected Government of Canada deposits resulting from the large sales of the Canada Savings Bonds.

The rate of growth of non-bank deposit-taking institutions, (Quebec savings banks, caisses populaires and credit unions, trust and mortgage loan companies) strongly affected by the moderation in the level of consumer expenditures and residential construction in the second half of the year, decelerated substantially in 1974. The growth of financial assets amounted to \$4.4 billion during the year, down from the \$4.8 billion registered in 1973. All near-bank institutions registered a reduced rate of increase in financial assets in 1974.

Although the near-banks continued to play an important role as suppliers of mortgage funds in 1974, they suffered considerably from the general slowdown in residential construction in the second half of the year. Total mortgage funds supplied by all institutions in Canada in 1974 amounted to \$7.5 billion, compared to an amount of \$7.0 billion in 1973, but the net amount supplied in the second half of the year (\$3.5 billion) was substantially lower than the net amount supplied for the same period last year (\$4.0 billion). Mortgage lending rates increased steadily from the first quarter to the end of the third quarter, stabilizing only in the last months of the year.

Near-banks, which had provided close to half the total net increase in mortgage funds in the first six months of 1974 supplied only 37.9% in the second half of the year; that proportion

slipped to 31.3% in the fourth quarter. The chartered banks and public financial institutions on the other hand increased their shares of the supply of new mortgage funds in 1974; the banks provided 19.4% and public financial institutions 12.2% of the total mortgage lending in 1974, compared to 16.7% and 6.1%, respectively in 1973. The new supply of mortgage funds by public financial institutions became increasingly important in the latter part of the year as the residential construction sector weakened.

Total consumer credit flow in the economy in 1974 amounted to \$2,783 million, slightly lower than the total flow of \$2,840 million recorded in 1973. The decline reflected the moderation in consumer spending, mainly in durable goods, in the last two quarters of 1974. Among financial lending institutions, only the chartered banks had a higher flow of consumer credit. Indeed, the net flow of consumer credit in 1974 was lower by about \$80 million in the case of near-banks (\$103 million for the caisses populaires and credit unions, the main near-bank lenders) and by about \$200 million in the case of the sales finance and consumer loan companies (classified in other lending institutions).

The net inflow of deposits at near-banks decelerated in 1974 to \$4.0 billion compared to \$4.2 billion in 1973. This deceleration continued steadily through the year and the flow decreased from \$1.4 billion in the first quarter of 1974 to \$0.7 billion in the last quarter of the year. Only mortgage loan companies had higher deposit inflows in 1974 (\$724 million in 1974, against \$667 million in 1973). While the substitution by households of term deposits for Canada Savings Bonds in the second quarter appeared to have partly increased the deposits at near-banks, the large net sales of Canada Savings Bonds in the fourth quarter unfavourably affected them.

Led by an unusually large merchandise trade balance deficit, Canada's current account balance deficit increased from \$425 million in 1973 to \$1,877 million in 1974. This deficit was more than offset by a net capital inflow of \$1,901 million in 1974 (excluding official reserves) resulting from transactions in financial claims between Canadians and non-residents.

Financial transactions between Canada and the rest of the world were dominated by the large acquisitions of Canadian bonds by non-residents, particularly provincial bonds. Net acquisitions of Canadian bonds by non-residents increased sharply from \$683 million in 1973 to \$1,982 million in 1974. This increase in net purchases occurred in all categories of bonds, except Government of Canada bonds, and principally reflected net acquisitions of \$1.6 billion provincial government bonds; this amount exceeded by almost \$1 billion the net purchases in 1973. Borrowing by provincial governments in 1974 included large scale sales of bonds to the Middle East countries. Long-term interest rates in Canada during the year increased more sharply than in the United States and Europe and contributed to some extent to the high level of bond borrowing by Canadians abroad.

Claims by non-residents on associated enterprises in Canada in 1974 declined to the lowest level in a decade with a net inflow of \$494 million, down from \$722 million in 1973. Direct investments from non-residents in petroleum and natural gas industries, unfavourably affected by the uncertainty surrounding the future Canadian energy policy, contributed substantially to the lower inflow. Direct investments abroad by Canadians reached a record level in 1974 with net outflow of \$645 million.

Foreign currency deposits of non-residents in Canadian branches of chartered banks increased by only \$90 million in 1974, down from a flow of \$3.4 billion registered in 1973. However, an inflow of \$517 million was recorded in the fourth quarter of the year, compared to an outflow of \$220 million in the third quarter. In the same manner, Canadian residents reduced their holdings of foreign currency and deposits in 1974 by more than \$0.7 billion, which was a striking change from an increase of \$3.7 billion in 1973. Non-residents also invested to the extent of \$179 million in Canadian finance and other short-term paper in 1974. The reliance of non-residents on bank and other loans accounted for a large flow of almost \$1.5 billion in 1974, up from the flow of \$0.7 billion in 1973.

The government sector as a whole continued to be in a net lending position in 1974. The federal government net lending position rose from \$274 million in 1973 to \$630 million in 1974. The central government financial activity was dominated by the large issues of Canada Savings Bonds in the fourth quarter, which, added to the other issues of marketable bonds and treasury bills, increased the government's liabilities by \$4,379 million in 1974, compared to a net reduction of \$106 million in 1973. The CSB campaign boosted the cash balances of the

federal government by about \$4.0 billion in the fourth quarter, for an annual increase of \$2.6 billion. The government also added \$1.9 billion to its claims on affiliates during the year; this amount included large advances to the Exchange Fund Account in the first quarter and advances to its financial institutions to increase their mortgage lending.

Provincial governments, although in a net lending position in 1974, raised \$2.4 billion through the bond markets, approximately two thirds of this representing issues on foreign markets. Local governments, in a net borrowing position of \$1.5 billion met its financing requirements mainly through bond issues which amounted to \$739 million in 1974; the municipalities relied on the foreign market to the extent of \$151 million.

A summary matrix of the financial flow system is presented in Table 21.37. More detailed data for individual sectors and summary matrices are available in the quarterly Statistics Canada publication *Financial flow accounts* (Catalogue No. 13-002).

Sources

- 21.1 Gross National Product Division, System of National Accounts (Current) Branch, Statistics Canada.
- 21.2.1 - 21.2.2 Industry Product Division, System of National Accounts (Current) Branch, Statistics Canada.
- 21.2.3 Input-Output Division, System of National Accounts (Structural) Branch, Statistics Canada.
- 21.3 Prices Division, General Statistics Branch, Statistics Canada.
- 21.4 - 21.5 Balance of Payments Division, System of National Accounts (Current) Branch, Statistics Canada.
- 21.6 Financial Flows and Multinational Enterprise Division, System of National Accounts (Current) Branch, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed		billion = '000,000,000
certain tables may not add due to rounding			

21.1 Gross national product in current and constant (1971) dollars, and index of gross national expenditure in constant (1971) dollars, 1950-74

Year	Gross national product		Index of gross national expenditure in constant (1971) dollars (1971 = 100)
	Millions of current dollars	Millions of constant (1971) dollars	
1950	18,491	33,762	36.1
1951	21,640	35,450	37.9
1952	24,588	38,617	41.3
1953	25,833	40,605	43.4
1954	25,918	40,106	42.9
1955	28,528	43,891	47.0
1956	32,058	47,599	50.9
1957	33,513	48,718	52.1
1958	34,777	49,844	53.3
1959	36,846	51,737	55.4
1960	38,359	53,231	57.0
1961	39,646	54,741	58.6
1962	42,927	58,475	62.6
1963	45,978	61,487	65.8
1964	50,280	65,610	70.2
1965	55,364	69,981	74.9
1966	61,828	74,844	80.1
1967	66,409	77,344	82.8
1968	72,586	81,864	87.6
1969	79,815	86,225	92.3
1970	85,685	88,390	94.6
1971 ^r	93,462	93,462	100.0
1972 ^r	103,952	99,064	106.0
1973 ^r	120,438	105,912	113.3
1974	140,880	108,862	116.5

21.2 National income and gross national product, by component, 1971-74 (million dollars)

Item	1971 ^r	1972 ^r	1973 ^r	1974
Wages, salaries and supplementary labour income	51,391	57,277	64,961	75,970
Military pay and allowances	908	979	1,092	1,185
Corporation profits before taxes ¹	8,681	10,704	14,386	18,303
Deduct: dividends paid to non-residents ²	-1,079	-1,031	-1,268	-1,506
Interest, and miscellaneous investment income ³	3,778	4,327	5,270	7,014
Accrued net income of farm operators from farm production ⁴	1,574	1,675	3,137	3,734
Net income of non-farm unincorporated business, incl. rent ⁵	5,951	6,265	6,907	7,345
Inventory valuation adjustment	-724	-1,001	-2,384	-4,264
Net national income at factor cost	70,480	79,195	92,101	107,781
Indirect taxes less subsidies	12,276	13,813	15,399	17,963
Capital consumption allowances and miscellaneous valuation adjustments	10,517	11,631	13,384	15,354
Residual error of estimate	189	-687	-446	-218
Gross national product at market prices	93,462	103,952	120,438	140,880

¹Excludes profits of government business enterprises.

²Includes withholding tax.

³Includes profits (net of losses) of government business enterprises and other government investment income.

⁴Includes value of physical change in farm inventories and accrued earnings of farm operators arising out of operations of the Canadian Wheat Board.

⁵Includes net income of independent professional practitioners and imputed net rent on owner-occupied dwellings.

21.3 Gross national expenditure, 1971-74 (million dollars)

Item	1971 ^r	1972 ^r	1973 ^r	1974
Personal expenditure on consumer goods and services	54,468	60,580	69,367	79,910
Government current expenditure on goods and services	18,371	20,299	22,689	27,374
Gross fixed capital formation	20,394	22,508	26,987	32,900
Government	3,754	3,968	4,305	5,348
Business	16,640	18,540	22,682	27,552
Residential construction	4,410	5,278	6,549	7,646
Non-residential construction	5,952	6,204	7,304	8,984
Machinery and equipment	6,278	7,058	8,829	10,922
Value of physical change in inventories	250	626	1,267	2,665
Government	-40	16	-15	26
Business				
Non-farm	266	902	1,081	2,669
Farm and grain in commercial channels	24	-292	201	-30
Exports of goods and services	22,187	24,502	30,684	38,488
Deduct: imports of goods and services	-22,019	-25,251	-31,003	-40,675
Residual error of estimate	-189	688	447	218
Gross national expenditure at market prices	93,462	103,952	120,438	140,880

21.4 Gross national expenditure in constant (1971) dollars, 1971-74 (million dollars)

Item	1971	1972	1973	1974
Personal expenditure on consumer goods and services	54,468	58,083	62,461	65,070
Government current expenditure on goods and services	18,371	18,949	19,687	21,256
Gross fixed capital formation	20,394	21,628	23,876	25,171
Government	3,754	3,787	3,747	4,026
Business	16,640	17,841	20,129	21,145
Residential construction	4,410	5,042	5,486	5,345
Non-residential construction	5,952	5,912	6,418	6,908
Machinery and equipment	6,278	6,887	8,225	8,892
Value of physical change in inventories	250	579	1,044	2,125
Government	-40	15	-16	18
Business				
Non-farm	266	925	1,001	2,053
Farm and grain in commercial channels	24	-361	59	54
Exports of goods and services	22,187	23,597	26,094	25,101
Deduct: imports of goods and services	-22,019	-24,449	-27,687	-30,074
Residual error of estimate	-189	677	437	213
Gross national expenditure in constant (1971) dollars	93,462	99,064	105,912	108,862

21.5 Year-to-year percentage change in gross national expenditure, 1971-74

Item	1971 ^r	1972 ^r	1973 ^r	1974
Personal expenditure on consumer goods and services				
Value	8.2	11.2	14.5	15.2
Volume	5.7	6.6	7.5	4.2
Price	2.4	4.3	6.5	10.5
Government current expenditure on goods and services				
Value	10.5	10.5	11.8	20.7
Volume	4.1	3.2	3.9	8.0
Price	6.2	7.1	7.6	11.8
Gross fixed capital formation				
Value	13.2	10.4	19.9	21.9
Volume	7.9	6.1	10.4	5.4
Price	4.9	4.1	8.6	15.7
Government				
Value	18.3	5.7	8.5	24.2
Volume	12.8	0.9	-1.1	7.5
Price	4.9	4.8	9.6	15.6
Business				
Value	12.1	11.4	22.3	21.5
Volume	6.8	7.2	12.8	5.1
Price	4.9	3.9	8.5	15.6
Residential construction				
Value	26.0	19.7	24.1	16.8
Volume	18.6	14.3	8.8	-2.6
Price	6.3	4.7	14.0	19.8
Non-residential construction				
Value	10.5	4.2	17.7	23.0
Volume	4.2	-0.7	8.6	7.6
Price	6.2	4.9	8.5	14.3
Machinery and equipment				
Value	5.4	12.4	25.1	23.7
Volume	2.6	9.7	19.4	8.1
Price	2.7	2.5	4.7	14.5
Exports of goods and services				
Value	4.8	10.4	25.2	25.4
Volume	4.5	6.4	10.6	-3.8
Price	0.3	3.8	13.3	30.4
Imports of goods and services				
Value	8.9	14.7	22.8	31.2
Volume	7.0	11.0	13.2	8.6
Price	1.8	3.3	8.4	20.7
Gross national expenditure at market prices				
Value	9.1	11.2	15.9	17.0
Volume	5.7	6.0	6.9	2.8
Price	3.2	4.9	8.4	13.8

21.6 Personal income, by source and by province, 1971-74 (million dollars)

Source and province or territory	1971 ^r	1972 ^r	1973 ^r	1974
Source				
Wages, salaries and supplementary labour income	51,391	57,277	64,961	75,970
Military pay and allowances	908	979	1,092	1,185
Net income received by farm operators from farm production	1,509	1,724	3,127	3,204
Net income of non-farm unincorporated business including rent	5,951	6,265	6,907	7,345
Interest, dividends and miscellaneous investment income	5,512	6,624	7,775	9,570

21.6 Personal income, by source and by province, 1971-74 (million dollars) (concluded)

Source and province or territory	1971 ^r	1972 ^r	1973 ^r	1974
Current transfers				
From government				
Transfer payments to persons (excl. interest on public debt)	8,255	9,920	11,200	13,715
Capital assistance	22	46	44	54
From corporations (charitable and other contributions and bad debts)	163	177	178	209
From non-residents	165	177	203	217
Total, personal income	73,876	83,189	95,487	111,469
Province or territory				
Newfoundland	1,138	1,317	1,516	1,799
Prince Edward Island	240	285	342	383
Nova Scotia	2,105	2,414	2,781	3,244
New Brunswick	1,599	1,823	2,042	2,451
Quebec	18,323	20,653	23,500	27,626
Ontario	30,857	34,623	38,963	44,997
Manitoba	3,178	3,561	4,142	4,785
Saskatchewan	2,550	2,739	3,578	4,265
Alberta	5,557	6,251	7,432	8,683
British Columbia	8,099	9,259	10,886	12,870
Yukon Territory and Northwest Territories	157	187	216	259
Foreign countries ¹	73	77	89	107

¹Income of Canadians temporarily abroad, including pay and allowances of Canadian Armed Forces abroad.

21.7 Disposition of personal income, 1971-74 (million dollars)

Item	1971 ^r	1972 ^r	1973 ^r	1974
Personal expenditure on consumer goods and services	54,468	60,580	69,367	79,910
Current transfers				
To government				
Income taxes	10,143	11,410	13,308	16,177
Succession duties and estate taxes	279	230	205	178
Employer and employee contributions to social insurance and government pension funds	2,620	3,016	3,551	4,667
Other	1,107	1,037	1,062	1,108
To corporations (transfer portion of interest on the consumer debt)	649	702	997	1,493
To non-residents	168	190	234	224
Personal saving	4,442	6,024	6,763	7,712
Total, personal income	73,876	83,189	95,487	111,469

21.8 Personal expenditure on consumer goods and services, 1971-74 (million dollars)

Item	1971 ^r	1972 ^r	1973 ^r	1974
Food and non-alcoholic beverages	8,442	9,545	11,431	13,665
Tobacco and alcoholic beverages	3,584	3,929	4,334	4,750
Clothing, footwear and accessories	4,382	4,868	5,678	6,703
Gross rent, fuel and power	10,592	11,402	12,592	14,253
Furniture, furnishing and household equipment and operation	5,211	5,936	6,943	8,136
Transportation and communication	7,775	8,741	10,080	11,496
Medical care and health services	1,679	1,866	2,112	2,413
Other	12,803	14,293	16,197	18,494
Total	54,468	60,580	69,367	79,910
Durables	7,762	8,984	10,588	12,103
Semi-durables	7,224	8,108	9,497	11,267
Non-durables	17,357	19,354	22,521	26,629
Services	22,125	24,134	26,761	29,911

21.9 Federal, provincial and local government revenue and expenditure¹, 1971-74 (million dollars)

Item	1971 ^r	1972 ^r	1973 ^r	1974
Revenue				
Direct taxes: persons and unincorporated business				
Income taxes	10,143	11,410	13,308	16,177
Succession duties and estate taxes	279	230	205	178
Employer and employee contributions to social insurance and government pension funds	2,620	3,016	3,551	4,667
Direct taxes: corporate and government business enterprises	3,346	3,877	4,747	6,468
Direct taxes: non-residents (withholding taxes)	278	287	322	430
Indirect taxes	13,048	14,697	16,500	20,541
Other current transfers from persons	1,107	1,037	1,062	1,108
Investment income				
Interest and royalties	2,659	3,065	3,799	4,888
Remitted profits of government business enterprises	502	617	572	575
Total, revenue	33,982	38,236	44,066	55,032

21.9 Federal, provincial and local government revenue and expenditure¹, 1971-74 (million dollars) (concluded)

Item	1971 ^r	1972 ^r	1973 ^r	1974
Current expenditure				
Purchases of goods and services	18,371	20,299	22,689	27,374
Transfer payments to persons	8,255	9,920	11,200	13,715
Current transfers to non-residents	248	277	311	400
Interest on the public debt	3,622	4,137	4,680	5,329
Capital assistance	225	245	295	273
Subsidies	772	884	1,101	2,578
Saving	2,489	2,474	3,790	5,363
Total, current expenditure	33,982	38,236	44,066	55,032
Surplus or deficit (on a national accounts basis)				
Saving	2,489	2,474	3,790	5,363
Add: capital consumption allowances	1,334	1,482	1,693	1,939
Deduct: gross capital formation	-3,714	-3,984	-4,290	-5,374
Equals: surplus or deficit	109	-28	1,193	1,928

^rExcludes current transfers from other levels of government.**21.10 Annual growth rates of real domestic product, by industry, selected periods, 1961-74**

Industry	1961-66	1966-74	1961-74	1970-74
Agriculture	5.6	0.9	1.5	-0.6
Forestry	5.7	2.0	2.9	5.0
Fishing and trapping	2.5	-3.2	0.5	-6.2
Mines (incl. milling), quarries and oil wells	6.6	6.1	6.0	4.8
Manufacturing	8.4	4.9	5.9	6.2
Non-durables	6.0	4.6	4.9	5.3
Durables	11.2	5.2	7.0	7.0
Construction	7.4	3.3	4.6	4.1
Electric power, gas and water utilities	7.2	8.4	8.0	8.3
Transportation, storage and communication	6.9	6.6	6.7	7.7
Trade	7.6	6.6	6.9	7.8
Wholesale	6.7	4.8	5.4	6.0
Retail	8.2	5.0	6.2	6.0
Finance, insurance and real estate	5.8	4.7	5.0	6.0
Community, business and personal services	6.3	5.4	5.8	5.2
Public administration and defence	7.0	5.2	6.2	4.3
	2.2	4.1	3.4	5.5
Real domestic product	6.8	5.0	5.6	5.5

21.11 Quantity indexes of real domestic product at factor cost, by industry of origin, 1972-74 (1961=100)

Industry	1972	1973	1974
Agriculture	140.8	142.3	132.3
Forestry	129.0	158.0	158.0
Fishing and trapping	102.4	102.6	86.6
Mines (incl. milling), quarries and oil wells	192.2	210.5	206.2
Manufacturing	195.8	211.9	217.4
Non-durables	172.4	184.4	188.6
Durables	225.4	246.7	254.0
Construction	166.5	178.0	178.0
Electric power, gas and water utilities	229.4	247.2	265.4
Transportation, storage and communication	198.8	216.7	232.4
Trade	182.6	192.5	201.3
Wholesale	197.0	206.0	220.0
Retail	173.8	184.2	190.1
Finance, insurance and real estate	186.0	197.4	208.0
Community, business and personal services	194.8	202.7	213.2
Public administration and defence	138.9	148.9	156.6
Real domestic product	184.5	197.2	204.3

21.12 Census value added in goods-producing industries, by province, 1971-73

Province or territory	1971		1972		1973	
	\$'000	%	\$'000	%	\$'000	%
Newfoundland	709,116	1.8	612,272	1.4	763,469	1.5
Prince Edward Island	84,125	0.2	95,826	0.2	136,819	0.3
Nova Scotia	731,603	1.9	839,520	1.9	991,020	1.9
New Brunswick	624,610	1.6	703,762	1.6	897,400	1.7
Quebec	9,266,839	23.8	10,145,017	23.4	11,638,963	22.2
Ontario	16,498,744	42.4	18,483,572	42.6	21,543,330	41.1
Manitoba	1,362,360	3.5	1,534,444	3.5	2,020,626	3.9
Saskatchewan	1,676,177	4.3	1,741,086	4.0	2,474,653	4.7
Alberta	3,825,507	9.8	4,439,927	10.2	5,793,744	11.1
British Columbia	4,041,156	10.4	4,655,054	10.7	5,940,706	11.3
Yukon Territory and Northwest Territories	100,921	0.3	113,409	0.3	165,904	0.3
Canada	38,921,158	100.0	43,363,889	100.0	52,366,634	100.0

21.13 Census value added in goods-producing industries, by industry and province, 1973

Industry	Province or territory							
	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	\$'000	%	\$'000	%	\$'000	%	\$'000	%
Agriculture	—	—	45,034	32.9	54,077	5.4	63,058	7.0
Forestry	37,124	4.9	—	—	15,768	1.6	67,148	7.5
Fisheries	47,886	6.3	12,420	9.1	75,970	7.7	22,206	2.5
Trapping	119	—	72	0.1	325	—	415	—
Mining	186,002	24.3	570	0.4	62,037	6.3	56,152	6.2
Electric power	87,583	11.5	6,237	4.6	57,895	5.8	71,340	8.0
Manufacturing	167,244	21.9	26,047	19.0	430,987	43.5	391,134	43.6
Construction	237,511	31.1	46,439	33.9	293,961	29.7	225,947	25.2
Total	763,469	100.0	136,819	100.0	991,020	100.0	897,400	100.0
	Quebec		Ontario		Manitoba		Saskatchewan	
	\$'000	%	\$'000	%	\$'000	%	\$'000	%
Agriculture	589,620	5.1	1,178,343	5.5	538,297	26.6	1,336,622	54.0
Forestry	217,002	1.9	150,768	0.7	8,971	0.4	9,570	0.4
Fisheries	12,951	0.1	10,376	—	5,041	0.3	1,625	0.1
Trapping	3,050	—	7,224	—	3,711	0.2	3,701	0.1
Mining	514,167	4.4	917,197	4.3	230,361	11.4	426,131	17.2
Electric power	640,773	5.5	857,107	4.0	105,290	5.2	80,859	3.3
Manufacturing	7,531,014	64.7	14,980,971	69.5	720,739	35.7	291,979	11.8
Construction	2,130,386	18.3	3,441,344	16.0	408,216	20.2	324,166	13.1
Total	11,638,963	100.0	21,543,330	100.0	2,020,626	100.0	2,474,653	100.0
	Alberta		British Columbia		Yukon Territory and Northwest Territories		Canada	
	\$'000	%	\$'000	%	\$'000	%	\$'000	%
Agriculture	1,073,220	18.5	199,367	3.4	—	—	5,077,638	9.7
Forestry	18,805	0.3	691,224	11.6	—	—	1,216,380	2.3
Fisheries	802	—	130,407	2.2	846	0.5	320,530	0.6
Trapping	6,672	0.1	1,744	—	1,383	0.8	28,416	—
Mining	2,423,170	41.8	570,578	9.6	146,928	88.6	5,533,293	10.6
Electric power	155,517	2.7	269,356	4.5	13,357	8.1	2,345,314	4.5
Manufacturing	1,016,776	17.6	2,675,585	45.0	3,390	2.0	28,235,866	53.9
Construction	1,098,782	19.0	1,402,445	23.6	—	—	9,609,197	18.4
Total	5,793,744	100.0	5,940,706	100.0	165,904	100.0	52,366,634	100.0

¹Included with British Columbia.

21.14 Aggregate productivity measures, 1965-74 (1961=100)

Year and industry	Output	Persons employed	Man-hours	Output per person	Output per man-hour	Labour compensation	Unit labour cost
Commercial industries							
1965	131.7	113.0	110.6	116.6	119.1	133.3	101.2
1966	141.4	116.7	112.9	121.1	125.3	149.1	105.4
1967	145.5	118.9	114.3	122.4	127.3	163.0	112.0
1968	154.1	119.0	113.1	129.4	136.3	173.7	112.7
1969	163.5	122.8	115.5	133.2	141.5	192.5	117.8
1970	167.2	122.7	114.3	136.3	146.3	206.0	123.2
1971	177.7	124.4	115.2	142.9	154.2	225.4	126.8
1972	187.5	127.5	117.4	147.1	159.7	250.3	133.5
1973	201.0	133.2	122.9	150.9	163.5	284.8	141.7
1974	208.4	139.7	128.1	149.2	162.6	332.5	159.6
Annual rate of change							
1961-66	% 7.1	3.2	2.5	3.8	4.5	8.3	1.0
1966-74	% 5.1	2.0	1.3	3.0	3.7	10.1	4.7
1961-74	% 5.7	2.3	1.6	3.3	4.1	9.5	3.6
Commercial non-agricultural industries							
1965	132.0	117.4	116.7	112.6	113.2	135.6	102.7
1966	141.2	122.9	120.8	114.9	116.9	152.3	107.9
1967	147.0	125.0	122.3	117.6	120.2	166.4	113.2
1968	155.7	125.5	121.5	124.1	128.1	177.6	114.1
1969	165.2	130.1	124.8	127.0	132.4	197.4	119.5
1970	169.1	130.6	124.1	129.5	136.3	212.1	125.4
1971	179.1	132.6	125.2	135.1	143.0	232.6	129.9
1972	190.1	136.9	129.0	138.8	147.4	259.2	136.3
1973	204.3	143.9	135.8	141.9	150.4	293.8	143.8
1974	212.6	151.3	141.9	140.5	149.8	342.6	161.1
Annual rate of change							
1961-66	% 7.2	4.2	3.9	2.9	3.2	8.7	1.4
1966-74	% 5.3	2.4	1.8	2.8	3.4	10.3	4.7
1961-74	% 5.9	3.0	2.3	2.9	3.5	9.8	3.6
Commercial goods-producing industries							
1965	135.3	108.7	106.8	124.5	126.7	133.1	98.4
1966	145.4	110.8	108.1	131.3	134.5	149.3	102.7
1967	146.1	111.1	107.5	131.5	135.9	160.7	110.0
1968	155.4	110.1	105.7	141.2	147.0	169.6	109.2
1969	164.8	111.1	106.0	148.3	155.5	185.3	112.4
1970	166.3	108.4	102.7	153.4	161.9	194.5	116.9
1971	177.7	108.9	102.7	163.2	173.0	211.2	118.9
1972	186.0	109.6	103.0	169.7	180.6	232.1	124.8

21.14 Aggregate productivity measures, 1965-74 (1961=100) (concluded)

Year and industry	Output	Persons employed	Man-hours	Output per person	Output per man-hour	Labour compensation	Unit labour cost
Commercial goods-producing industries (concluded)							
1973	200.5	114.1	107.9	175.6	185.8	266.4	132.9
1974	203.4	117.9	111.1	172.6	183.1	308.4	151.6
Annual rate of change							
1961-66	% 7.7	2.1	1.6	5.4	6.0	8.3	0.6
1966-74	% 4.7	0.5	0.1	4.1	4.6	9.0	4.2
1961-74	% 5.4	0.9	0.4	4.5	5.0	8.7	3.1
Commercial non-agricultural goods-producing industries							
1965	136.2	116.1	117.9	117.3	115.5	137.5	101.0
1966	145.3	121.4	122.7	119.7	118.4	155.7	107.2
1967	149.2	121.1	121.3	123.2	123.0	167.1	112.0
1968	158.8	120.4	120.2	131.9	132.1	176.7	111.3
1969	168.4	122.4	121.1	137.6	139.1	193.8	115.1
1970	170.3	119.9	118.1	142.0	144.2	204.8	120.3
1971	180.6	120.6	118.1	149.8	153.0	223.4	123.7
1972	191.1	123.1	120.9	155.2	158.1	246.9	129.2
1973	207.2	130.0	128.1	159.4	161.7	281.5	135.9
1974	211.5	134.6	132.2	157.1	159.9	324.7	153.5
Annual rate of change							
1961-66	% 7.9	4.0	4.2	3.7	3.6	9.2	1.2
1966-74	% 5.0	1.1	0.8	3.9	4.2	9.3	4.1
1961-74	% 5.8	1.9	1.6	3.8	4.1	9.2	3.2
Commercial service-producing industries							
1965	127.9	118.4	115.6	108.1	110.7	133.6	104.4
1966	137.2	124.2	119.1	110.5	115.2	148.9	108.5
1967	144.9	128.7	123.2	112.6	117.6	165.7	114.3
1968	152.7	130.3	122.7	117.2	124.4	178.5	116.9
1969	162.1	137.2	128.0	118.1	126.6	201.1	124.1
1970	168.1	140.5	129.4	119.7	129.9	219.6	130.6
1971	177.6	143.7	131.5	123.6	135.0	242.2	136.4
1972	189.1	149.7	136.2	126.3	138.9	272.0	143.8
1973	201.6	156.9	142.6	128.5	141.4	306.6	152.1
1974	213.6	166.8	150.5	128.0	142.0	361.1	169.1
Annual rate of change							
1961-66	% 6.6	4.5	3.6	2.0	2.9	8.3	1.6
1966-74	% 5.6	3.6	2.7	2.0	2.8	11.3	5.4
1961-74	% 6.0	3.8	2.9	2.1	3.0	10.3	4.1
Agriculture							
1965	127.6	87.2	83.3	146.3	153.3	101.9	79.8
1966	145.9	79.9	77.5	182.6	188.3	104.4	71.6
1967	118.6	82.1	78.5	144.5	151.1	115.7	97.5
1968	126.0	80.2	75.2	157.2	167.5	119.6	94.9
1969	133.3	78.6	74.2	169.7	179.6	125.5	94.1
1970	131.4	75.0	70.3	175.1	187.0	121.7	92.6
1971	152.7	74.9	70.4	203.9	217.0	125.5	82.2
1972	40.8	70.6	65.3	199.3	215.5	128.1	91.0
1973	142.3	68.4	65.3	208.0	218.1	160.5	102.8
1974	132.3	69.5	66.4	190.5	199.1	193.6	146.3
Annual rate of change							
1961-66	% 5.6	-4.1	-4.9	10.2	11.1	1.0	-4.4
1966-74	% 0.9	-2.3	-2.5	3.3	3.4	6.2	5.3
1961-74	% 1.5	-2.9	-3.4	4.6	5.1	4.3	2.7
Manufacturing							
1965	139.5	115.7	117.7	120.5	118.5	136.9	98.1
1966	149.3	121.2	122.4	123.2	122.0	153.5	102.8
1967	153.3	121.7	122.1	126.0	125.6	164.8	107.5
1968	163.6	120.8	121.4	135.4	134.8	175.8	107.5
1969	175.4	123.2	123.3	142.4	142.3	191.9	109.4
1970	173.0	120.3	119.6	143.8	144.7	200.7	116.0
1971	183.3	119.6	118.7	153.2	154.4	213.2	116.3
1972	195.8	123.1	122.6	159.1	159.7	236.0	120.5
1973	211.8	130.1	129.9	162.8	163.1	267.5	126.3
1974	217.4	134.3	133.7	161.8	162.6	306.2	140.9
Annual rate of change							
1961-66	% 8.4	4.0	4.2	4.3	4.1	8.9	0.4
1966-74	% 4.9	1.0	0.9	3.8	4.0	8.5	3.4
1961-74	% 5.9	1.9	1.8	3.9	4.1	8.6	2.6
Other commercial goods-producing industries (excl. agriculture and manufacturing)							
1965	130.6	117.0	118.3	111.6	110.4	138.8	106.3
1966	138.5	122.0	123.3	113.5	112.3	160.0	115.5
1967	142.2	120.0	119.6	118.5	118.9	171.5	120.6
1968	150.6	119.4	117.6	126.1	128.0	178.6	118.6
1969	156.4	120.7	116.4	129.6	134.3	197.4	126.2
1970	165.5	119.1	114.9	139.0	144.1	212.8	128.6
1971	176.0	122.8	116.6	143.4	150.9	243.1	138.1
1972	183.1	123.1	117.1	148.7	156.3	267.8	146.2
1973	199.3	129.7	124.3	153.7	160.4	308.6	154.9
1974	201.5	135.2	129.1	149.0	156.1	360.3	178.8
Annual rate of change							
1961-66	% 7.0	4.1	4.2	2.8	2.7	9.7	2.6
1966-74	% 5.2	1.2	0.5	3.9	4.7	10.6	5.1
1961-74	% 5.6	1.9	1.3	3.7	4.2	10.2	4.3

21.15 Consumer price indexes for specific groups, 1965-74 (1961=100)

Year	Food	Housing	Clothing	Transportation	Health and personal care	Recreation, education and reading	Tobacco and alcohol	All-items index
Group weight as a percentage of total ¹	25	31	11	15	5	7	6	100
1965	109.6	105.8	107.9	104.8	113.0	105.6	105.1	107.4
1966	116.6	108.7	112.0	107.3	116.5	108.6	107.6	111.4
1967	118.1	113.4	117.6	111.8	122.5	114.1	110.4	115.4
1968	122.0	118.6	121.1	114.7	127.4	119.7	120.4	120.1
1969	127.1	124.7	124.5	120.0	133.6	126.8	125.0	125.5
1970	130.0	130.9	126.8	124.8	139.5	131.2	126.5	129.7
1971	131.4	136.8	128.7	129.9	142.4	135.6	128.6	133.4
1972	141.4	143.2	132.0	133.3	149.2	139.4	132.1	139.8
1973	162.0	152.4	138.6	136.8	156.4	145.2	136.3	150.4
1974	188.4	165.7	151.9	150.4	170.0	157.9	143.8	166.8

¹These weights, indicating the components' relative importance, are based on 1967 expenditures and have been incorporated since May 1973; prior to May 1973, the weights reflected 1957 expenditures.

21.16 Consumer price index reclassified by goods and services ¹, 1965-74 (1961=100)

Year	Goods		Semi-durable	Durable	Total	Total services	All-items
	Non-durable	Other					
Group weight as a percentage of total ²	25	17	12	12	66	34	100
1965	109.6	103.7	107.6	98.1	105.8	110.4	107.4
1966	116.6	106.4	111.4	98.1	109.8	114.3	111.4
1967	118.1	109.4	117.2	100.8	112.6	120.4	115.4
1968	122.0	115.2	120.9	102.4	116.8	126.7	120.1
1969	127.1	119.2	124.2	103.4	120.5	135.1	125.5
1970	130.0	122.1	126.3	104.7	122.9	143.1	129.7
1971	131.4	125.9	127.9	106.4	125.1	150.1	133.4
1972	141.4	129.5	131.0	107.7	130.8	157.9	139.8
1973	162.0	136.3	136.9	109.2	142.3	167.6	150.4
1974	188.4	151.6	149.9	117.5	160.2	180.9	166.8

¹The previous supplementary classification (by type of commodity and service) has been revised. Historical series relating to the revised classification replace the previously published indexes.

²These weights, indicating the components' relative importance, are based on 1967 expenditures and have been incorporated since May 1973; prior to May 1973, the weights reflected 1957 expenditures.

21.17 Consumer price indexes for regional cities, 1965-74

Year	1961=100										1969=100	
	St. John's, Nfld.	Hali-fax, NS	Saint John, NB	Mont-real, Que.	Ottawa, Ont.	Toronto, Ont.	Winnipeg, Man.	Saskatoon—Regina, Sask.	Edmonton—Calgary, Alta.	Vancouver, BC	Quebec, Que.	Thunder Bay, Ont.
1965	105.5	104.6	105.1	106.7	106.3	106.9	106.1	105.2	104.1	104.5	...	...
1966	108.0	107.4	107.8	109.9	110.4	111.6	109.3	108.3	107.5	107.0	...	...
1967	110.9	109.9	111.1	114.2	113.1	114.9	113.3	111.3	111.8	111.0	...	...
1968	115.9	114.2	115.1	118.1	118.4	119.3	118.2	115.8	116.7	115.1	...	...
1969	119.3	119.5	119.8	121.8	123.1	124.1	123.1	119.7	121.5	119.0	100.0	100.0
1970	121.6	124.4	123.4	124.3	127.4	127.3	127.0	122.2	125.1	123.0	102.4	102.3
1971	123.5	126.3	125.2	126.6	130.7	129.4	128.6	123.4	128.2	127.0	104.2	103.9
1972	129.7	131.0	130.8	131.4	136.0	134.7	133.5	128.3	133.2	132.1	107.1	107.6
1973	140.4	140.1	140.5	140.2	146.3	144.0	142.0	135.8	141.8	141.0	114.7	115.0
1974	158.4	153.6	154.9	155.7	161.9	159.1	157.2	...	...	157.4	127.6	127.3

¹Separate index numbers available for 1974 only: Saskatoon 148.0, Regina 148.7, Edmonton 156.3, Calgary 156.4.

21.18 Percentage change in consumer price indexes in Canada and other countries, 1973-74

Country	% change	Country	% change
North America		Africa	
Canada	11	Zaire (Kinshasa)	30
Mexico (Mexico City)	23	Kenya (Nairobi)	18
United States	11	South Africa (European population)	12
South America		Asia	
Argentina (Buenos Aires)	24	Sri Lanka (Colombo)	12
Brazil (São Paulo)	27	India	..
Chile (Santiago)	504	Indonesia (Jakarta)	40
Europe		Korea, Republic of	24
Belgium	13	Pakistan (Karachi) — industrial workers	29
Denmark	15	Australasia	
France	14	Australia	15
Germany, Federal Republic of	7	New Zealand	11
Greece	27	Middle East	
Ireland	17	Iran	14
Netherlands	10	Israel	40
Sweden	10	Turkey (Ankara)	24
Switzerland	10		
United Kingdom	16		

21.19 Intercity indexes of retail price differentials for selected commodities and services (combined cities average=100)

Commodity grouping	City					
	St. John's, Nfld.	Charlotte-town, PEI	Halifax, NS	Saint John, NB	Montreal, Que.	Ottawa, Ont.
As at December 1973						
Transportation	108	104	102	105	106	104
Health and personal care	102	97	97	97	96	101
Recreation and reading	96	92	100	97	103	100
Tobacco and alcohol	126	105	107	108	102	101
As at May 1971 ¹						
Food at home	108	108	102	104	98	100
Household operation ²	105	106	105	104	105	99
Clothing	106	102	100	105	100	99
	Toronto, Ont.	Winnipeg, Man.	Regina, Sask.	Edmonton, Alta.	Vancouver, BC	
As at December 1973						
Transportation	100	91	93	94		98
Health and personal care	106	100	95	98		100
Recreation and reading	101	96	96	94		98
Tobacco and alcohol	100	102	102	97		95
As at May 1971 ¹						
Food at home	98	99	103	102		106
Household operation ²	97	92	93	93		103
Clothing	97	101	103	99		103

¹These components are now being processed using more recent data.²Excludes fuel and utilities.21.20 Gross weighted industry selling price index (manufacturing)¹, 1963-74 (1961=100)

Year	Index	Year	Index	Year	Index
1963	102.5	1967	109.8	1971	121.6
1964	103.3	1968	112.1	1972	127.4
1965	104.7	1969	116.3	1973	142.8
1966	107.7	1970	119.1	1974	171.2P

¹The index measures the movements of prices of gross shipments of manufacturing industries, including inter-industry shipments between individual industries within manufacturing. Therefore, it duplicates the movements of some prices in the sense that, for example, flour prices are given full weight as part of the shipments of the flour mills industry and then are implicitly counted again through full weighting of the shipment prices of those manufacturing industries which use flour as an ingredient in their outputs, e.g., bread, biscuits, cakes, etc.

21.21 General wholesale index annual averages, 1951-74 (1935-39 = 100)

Year	Average	Year	Average	Year	Average	Year	Average
1951	240.2	1957	227.4	1963	244.6	1969	282.4
1952	226.0	1958	227.8	1964	245.4	1970	286.4
1953	220.7	1959	230.6	1965	250.4	1971	289.9
1954	217.0	1960	230.9	1966	259.5	1972	310.3
1955	218.9	1961	233.3	1967	264.1	1973	376.9
1956	225.6	1962	240.0	1968	269.9	1974	460.4P

21.22 Index numbers of wholesale prices in Canada and other countries, 1972-74 (1970 = 100)

Country	1972	1973	1974	Country	1972	1973	1974
Belgium	103.4	116.3	135.7	India	117.9	140.7	179.0
Brazil	142.8	166.4	..	Ireland	116.6	137.6	..
United Kingdom ¹	109.2	144.5	215.2	Korea, Republic of	123.8	132.4	188.2
Canada	108.3	131.5	160.7	Netherlands	104.5	117.7	..
Chile	200.0	1,226.0	13,838.0	New Zealand	120.3	138.3	142.9
Denmark	109.3	125.5	153.3	Norway	107.9	116.5	137.8
France ²	106.8	122.5	..	Sweden	109.0	121.0	151.0
Germany, Federal Republic of	107.0	114.1	129.4	Switzerland	105.9	117.2	136.1
Greece	110.0	135.8	185.7	Turkey	136.8	164.4	..
				United States	107.9	122.7	145.9

¹Basic material only.²Industrial products only.

21.23 Price indexes of residential and non-residential building materials and wage rates, 1965-74 (1961 = 100)

Year	Residential input indexes			Non-residential input indexes		
	Building materials	Labour	Total	Building materials	Labour	Total
1965	115.8	118.6	117.1	111.5	118.6	114.7
1966	120.5	128.1	124.2	115.4	128.1	121.1
1967	125.3	140.8	132.8	117.8	140.8	128.2
1968	132.1	152.8	142.0	120.7	152.8	135.1
1969	139.2	164.5	151.4	126.1	164.5	143.3
1970	137.6	188.7	162.2	129.5	188.7	156.1
1971	144.4	214.8	177.8	134.1	213.1	169.6
1972	158.5	237.4	195.6	142.3	233.0	183.0
1973	179.0	261.6	219.0	157.5 ^r	255.6 ^r	201.6 ^r
1974	195.2	287.5	239.4	186.2	280.7	228.6

21.24 Price indexes of inputs into residential building construction (1971=100)

Province and trade	1971	1972	1973	1974
Atlantic provinces	100.0	111.6	127.3	143.8
Materials	100.0	109.6	125.1	140.8
Labour	100.0	115.0	131.1	149.1
Quebec	100.0	110.0	123.3	133.6
Materials	100.0	112.1	127.1	136.5
Labour	100.0	106.2	116.2	128.3
Ontario	100.0	110.3	123.5	134.5
Materials	100.0	109.2	123.5	134.9
Labour	100.0	112.2	123.5	133.8
Prairie provinces	100.0	109.5	122.5	134.8
Materials	100.0	108.7	121.4	132.8
Labour	100.0	111.0	124.7	138.7
British Columbia	100.0	109.2	121.3	132.4
Materials	100.0	109.7	124.0	134.1
Labour	100.0	108.5	116.4	129.2
Canada	100.0	110.1	123.2	134.7
Materials	100.0	109.8	124.0	135.2
Labour	100.0	110.6	121.8	133.9
Trade				
Rough carpentry	100.0	119.4	143.0	141.7
Finished carpentry	100.0	112.4	134.3	143.3
Concrete	100.0	109.7	119.8	135.6
Masonry	100.0	107.4	116.9	130.3
Plumbing	100.0	104.1	113.0	139.8
Drywall	100.0	108.5	116.3	130.6
Windows	100.0	113.1	121.1	127.5
Cabinetry	100.0	103.7	111.3	122.8
Painting	100.0	108.6	118.0	131.6
Electrical	100.0	105.2	114.1	129.0
Forced warm air heating	100.0	104.0	109.1	119.2
Flooring, resilient	100.0	103.0	108.4	126.7
Roofing	100.0	106.8	117.6	138.7
Insulation and vapour barriers	100.0	106.9	113.6	127.9
Flooring, hardwood	100.0	108.0	136.9	150.8

21.25 New housing price indexes, for six metropolitan areas (1971=100)

Year	Montreal	Toronto	Ottawa-Hull	Winnipeg	Calgary	Edmonton
1969	..	..	..	94.8	89.5	90.9
1970	..	98.2	94.7	98.4	93.2	95.8
1971	100.0	100.0	100.0	100.0	100.0	100.0
1972	107.6	110.2	112.7	105.2	110.0	109.1
1973	125.8	137.6	138.2	128.4	126.4	132.6
1974	177.7	171.6	171.2	163.5	162.3	172.8

21.26 Highway construction price indexes, by province, and for all-items seven-province composite, years ended Mar. 31, 1964-73

Year	1961=100							1964=100
	Nfld.	NS	NB	Ont. ¹	Man.	Sask.	BC	Que.
1964	108.4	96.4	103.7	123.7	123.7	116.8	106.1	113.5
1965	119.5	116.8	103.2	144.0	133.3	144.4	127.7	130.9
1966	129.6	116.1	103.6	157.4	152.9	168.1	129.7	140.1
1967	115.2	122.7	103.0	156.3	153.8	137.6	119.4	135.1
1968	120.8	119.9	101.8	151.5	140.8	124.9	126.6	132.9
1969	116.5	123.1	102.2	154.0	144.6	132.1	143.2	138.0
1970	145.5	134.1	121.3	159.2	161.1	144.9	134.4	145.7
1971	176.2	148.3	114.8	164.5	159.7	147.1	139.0	151.9
1972	161.7	160.5	144.2	171.9	167.9	154.6	142.0	159.5
1973	201.1	179.0	158.1	187.5	201.0	194.3	166.1	181.9

¹Direct comparisons should not be made between this index and the highway index published by the Ontario Ministry of Transportation and Communications; the item content is substantially different.

21.27 Price indexes of electrical utility distribution systems, transmission lines, transformer stations, and hydro-electric generating stations, 1965-74 (1961 = 100)

Year	Distribution systems			Transmission lines	Transformer stations			Hydro-electric generating stations
	Construction	Equipment	Total		Structures and improvements	Equipment	Total	
1965	112.3	95.4	107.1	108.5	122.0	117.4	118.0	115.0
1966	118.4	99.0	112.4	113.0	130.2	120.4	122.4	122.1
1967	125.3	95.7	116.1	118.7	126.9	115.1	121.2	126.5
1968	126.3	91.8	115.6	121.9	124.2	106.7	117.2	131.6
1969	133.0	91.8	120.3	127.5	131.6	106.1	120.4	139.5
1970	144.5	95.4	129.3	136.5	139.2	119.4	132.5	148.3
1971	149.6	98.6	133.8	141.4	143.7	124.8	139.2	155.2
1972	158.1	98.3	139.6	147.6	149.3	123.5	141.4	164.8
1973	178.1	99.2	153.6	163.8	165.9	128.2	150.1	178.3
1974 ^P	233.4	120.1	191.4	207.4	214.8	162.3	183.8	206.6

21.28 Price indexes of machinery and equipment, 1965-74 (1968 = 100)

Year	Construction	Forestry (east of the Rockies)	Year	Construction	Forestry (east of the Rockies)
1965	89.2	...	1970	106.4	106.4
1966	92.1	...	1971	108.4	109.3
1967	94.7	...	1972	110.8	112.3
1968	100.0	100.0	1973	114.9	117.0
1969	104.4	102.9	1974	130.0	133.4

21.29 Farm input price index total, 1965-74 (1961=100)

Year	East	West	Canada	Year	East	West	Canada
1965	110.2	114.1	112.0	1970	131.4	131.0	131.2
1966	116.9	120.6	118.6	1971	135.8	135.9	135.9
1967	121.4	121.6	121.5	1972	141.7	145.2	143.3
1968	124.3	125.6	124.9	1973	170.1	162.9	166.7
1969	128.1	130.2	129.1	1974P	198.0	188.1	193.4

21.30 Index numbers of common and preferred stocks, 1965-74 (1961=100)

Year	Investors index				Mining index ¹	Preferred stocks ¹
	Total	Industrials	Utilities	Finance		
1965	132.8	139.8	136.3	100.7	122.5	105.1
1966	125.3	132.9	129.4	89.9	121.1	94.1
1967	131.3	140.4	133.4	92.4	110.9	89.9
1968	135.2	143.7	131.8	104.1	119.5	79.9
1969	149.8	157.7	142.0	126.4	127.3	77.3
1970	137.7	145.5	126.3	118.1	113.5	67.7
1971	147.4	150.3	146.6	137.7	105.1	68.8
1972	174.6	179.3	155.3	180.7	111.8	70.9
1973	187.5	200.8	145.9	182.1	132.5	72.7
1974	157.9	167.4	123.4	160.8	141.4	62.6

¹Not included in investors index.**21.31 Summary of the Canadian balance of international payments between Canada and all non-residents, 1968-74 (million dollars)**

Year	Current account balances			Capital account flows			Allocation of SDRs	Net official monetary movements
	Merchandise	Non-merchandise	Balance	Long-term	Short-term	Net		
1968	+1,471	-1,568	-97	+1,669	-1,223	+446	...	+349
1969	+964	-1,881	-917	+2,337	-1,355	+982	...	+65
1970	+3,052	-1,946	+1,106	+752	-328	+424	+133	+1,663
1971	+2,427	-2,121	+306	+482	-11	+471	+119	+896
1972	+1,645	-2,300	-655	+1,762	-888	+874	+117	+336
1973	+2,231	-2,656	-425	+659	-701	-42	—	-467
1974	+1,020	-2,897	-1,877	+944	+957	+1,901	—	+24

21.32 Current account transactions between Canada and all non-residents, 1968-74 (million dollars)

Year	Current receipts			Current payments			Current account balance
	Merchandise exports	Service transactions	Transfers	Merchandise imports	Service transactions	Transfers	
1968	13,720	3,070	674	12,249	4,822	490	-97
1969	15,035	3,695	695	14,071	5,719	552	-917
1970	16,921	4,246	765	13,869	6,345	612	+1,106
1971	17,961	4,310	875	15,534	6,705	601	+306
1972	20,222	4,386	906	18,577	6,976	616	-655
1973	25,500	4,991	1,039	23,269	8,007	679	-425
1974	32,493	5,759	1,363	31,473	9,264	755	-1,877

Item	United States		United Kingdom		Other non-residents		All non-residents	
	1973	1974P	1973	1974P	1973	1974P	1973	1974P
CURRENT ACCOUNT								
Current receipts								
Merchandise exports (adjusted)	17,253	21,590	1,607	1,975	6,640	8,928	25,500	32,492
Service receipts								
Travel	1,160	1,321	82	95	204	268	1,446	1,684
Interest and dividends	406	462	37	41	210	281	653	784
Freight and shipping	799	882	135	147	487	573	1,421	1,602
Other service receipts	750	836	287	286	434	567	1,471	1,685
Total, service receipts	3,115	3,501	541	569	1,335	1,689	4,991	5,755
Total, exports of goods and services	20,368	25,091	2,148	2,544	7,975	10,617	30,491	38,252
Transfer receipts								
Inheritances and immigrants' funds	124	143	90	139	302	436	516	718
Personal and institutional remittances	132	154	20	16	49	42	201	212
Withholding tax	322	433
Total, current receipts	20,624	25,388	2,258	2,699	8,326	11,095	31,530	39,615
Current payments								
Merchandise imports (adjusted)	16,439	21,065	1,003	1,182	5,827	9,226	23,269	31,473
Service payments								
Travel	1,073	1,198	194	216	475	572	1,742	1,986
Interest and dividends	1,653	1,885	110	128	234	263	1,997	2,276
Freight and shipping	860	945	140	151	591	687	1,591	1,783
Other service payments	1,704	1,945	166	215	485	626	2,355	2,786
Withholding tax	322	433
Total, service payments	5,290	5,973	610	710	1,785	2,148	8,007	9,264
Total, imports of goods and services	21,729	27,038	1,613	1,892	7,612	11,374	31,276	40,737
Transfer payments								
Inheritances and emigrants' funds	84	86	32	31	38	38	154	155
Personal and institutional remittances	68	76	29	33	172	159	269	268
Official contributions	—	—	—	—	256	332	256	332
Total, current payments	21,881	27,200	1,674	1,956	8,078	11,903	31,955	41,492
Current account balance								
Merchandise trade	+814	+525	+604	+793	+813	-298	+2,231	+1,020
Service transactions	-2,175	-2,472	-69	-141	-450	-459	-3,016	-3,505
Net transfers	+104	+135	+49	+91	-115	-51	+360	+608
Total, current account balance	-1,257	-1,812	+584	+743	+248	-808	-425	-1,877
CAPITAL ACCOUNT								
Direct investment								
In Canada	+485	+416	+127	-13	+108	+32	+720	+435
Abroad	-366	-363	-111	-22	-113	-260	-590	-645
Portfolio transactions								
Canadian securities								
Outstanding bonds	-27	+15	+27	+9	+31	+15	+31	+35
Outstanding stocks	+20	-68	-58	-57	+14	+14	-24	-111
New issues	+990	+1,839	+15	+19	+348	+579	+1,353	+2,437
Retirements	-382	-414	-46	-11	-235	-60	-663	-485
Foreign securities								
Outstanding issues	+73	+32	-7	-9	+27	+16	+93	+35
New issues	-4	-2	-3	—	-49	-24	-56	-26
Retirements	+8	+8	—	—	+7	+4	+15	+12
Loans and subscriptions,								
Government of Canada								
Advances	—	—	—	—	-249	-348	-249	-348
Repayments	—	—	+22	+22	+20	+15	+42	+37
Columbia River Treaty	+1	—	—	—	—	—		

21.34 Canadian balance of international indebtedness, selected years, 1939-71 (billion dollars)

Item	1939	1950	1960	1969	1970	1971
CANADIAN ASSETS						
Direct investment	0.7	1.0	2.5	5.2	6.2	6.5
Portfolio investment	0.7	0.6	1.3	3.0	2.7	2.8
Miscellaneous investment ¹	—	—	—	0.8	1.0	1.4
Government of Canada credits ²	—	2.0	1.5	1.4	1.5	1.6
Government of Canada subscriptions to international investment agencies	—	0.1	0.1	0.2	0.3	0.3
Total, Canadian long-term investment abroad	1.4	3.7	5.3	10.7	11.7	12.6
Net official monetary assets	0.5	2.0	2.0	3.3	4.7	5.6
Other Canadian short-term holdings of foreign exchange	—	0.1	1.2	3.6	3.6	2.7
Gross assets ³	1.9	5.7	8.5	17.6	20.0	20.9
Net official monetary assets	0.5	2.0	2.0	3.3	4.7	5.6
United States ^{3,4}	0.9	1.2	3.7	8.6	8.6	7.1
United Kingdom ^{3,4}	0.1	1.6	1.5	4.1	4.1	4.3
Other countries ^{3,4}	0.4	0.9	1.3	1.5	2.6	3.9
Short-term receivables (not included elsewhere) ⁵	..	0.2	0.5	3.1	3.6	4.9
Gross assets	1.9 ^a	5.9	8.9	20.7	23.6	25.8
CANADIAN LIABILITIES						
Direct investment	2.3	4.0	12.9	24.4	26.4	27.9
Government bonds	1.7	2.0	3.3	7.8	7.9	8.0
Other portfolio investment	2.6	2.4	4.6	6.8	6.9	7.2
Miscellaneous investment	0.3	0.3	1.4	2.7	2.9	3.1
Total, foreign long-term investment in Canada	6.9	8.7	22.2	41.6	44.0	46.2
Non-resident equity in Canadian assets abroad	0.2	0.3	1.1	2.3	2.7	2.9
Official Special Drawing Rights liabilities	0.1	0.3
Total, long-term liabilities	7.1	9.0	23.3	43.9	46.9	49.4
Non-resident holdings of Canadian dollars	0.3	0.6	0.6	0.9	0.8	0.9
Gross liabilities ³	7.4	9.6	24.0	44.7	47.7	50.3
United States ³	4.5	7.1	18.0	35.2	37.4	39.0
United Kingdom ³	2.6	2.0	3.5	4.2	4.3	4.6
Other countries ^{3,4}	0.3	0.5	2.4	5.4	6.0	6.7
Short-term payables (not included elsewhere) ^{5,7}						
Finance company obligations	..	0.8	1.6	1.2	1.3	1.3
Other	7.4 ^a	10.4	25.6	2.8	3.0	3.3
Gross liabilities				48.8	52.1	54.9
CANADA'S INTERNATIONAL INDEBTEDNESS						
Canadian net international indebtedness	5.5 ^a	4.5	16.6	28.1	28.5	29.1
Net official monetary assets	-0.5	-2.0	-2.0	-3.3	-4.7	-5.6
United States	3.6	5.9	14.3	26.6	28.8	31.9
United Kingdom	2.5	0.4	2.0	0.1	0.2	0.3
Other countries	-0.1	-0.4	1.1	3.9	3.4	2.8
Short-term (not included elsewhere)	..	0.6	1.1	0.9	0.8	-0.3

¹Includes export credits by government and private sectors less reserve against government inactive assets.²Includes medium-term non-marketable United States government securities held under the Columbia River Treaty arrangements since 1964.³Excludes short-term receivables and payables.⁴Excludes net official monetary assets.⁵Country distribution not available.⁶Includes international financial agencies.⁷At the end of 1964 about \$450 million previously classified as long-term investment was shown as part of short-term finance company obligations.**21.35 Canadian long-term investment abroad¹, by country and by type of investment, selected years, 1939-71 (million dollars)**

Location and type of investment	1939	1951	1960	1968	1969 ^r	1970 ^r	1971
United States							
Direct investment	412	912	1,618	2,546	2,979	3,251	3,388
Portfolio investment							
Stocks	380	289	827	2,086	2,155	2,110	2,125
Bonds	121	87	120	212	214	224	221
Miscellaneous investment	..	9	18	213	216	286	349
Government of Canada credits ²	—	—	—	90	58	24	—
Government of Canada subscriptions to international investment agencies	—	—	—	—	—	—	—
Total, United States	913	1,297	2,583	5,147	5,622	5,895	6,083

21.35 Canadian long-term investment abroad¹, by country and by type of investment, selected years, 1939-71
 (million dollars) (concluded)

Location and type of investment	1939	1951	1960	1968	1969 ^r	1970 ^r	1971
United Kingdom							
Direct investment	59	74	257	570	595	586	590
Portfolio investment							
Stocks	22	17	26	57	60	61	61
Bonds	21	17	16	20	20	20	19
Miscellaneous investment	..	13	18	36	45	66	71
Government of Canada credits ³	—	1,394	1,092	1,058	1,038	1,018	997
Government of Canada subscriptions to international investment agencies	—	—	—	—	—	—	—
Total, United Kingdom	102	1,515	1,409	1,741	1,758	1,751	1,738
Other Commonwealth countries ⁴							
Direct investment	54	88	299	700	725	791	843
Portfolio investment							
Stocks	7	6	10	14	15	17	18
Bonds	15	8	18	24	22	23	27
Miscellaneous investment	..	..	..	..	..	..	..
Government of Canada credits	—	—	35	77	141	245	356
Government of Canada subscriptions to international investment agencies	—	—	—	—	—	—	—
Total, other Commonwealth countries	76	102	362	815	903 ^a	1,076	1,244
Other countries							
Direct investment	146	92	293	801	912	1,560 ^a	1,713
Portfolio investment							
Stocks	102	155	187	253	287	56 ^a	62
Bonds	51	30	111	219	203	207	238
Miscellaneous investment	..	-80	-54	506	518	663	1,007
Government of Canada credits	31	528	335	208	206	201	215
Government of Canada subscriptions to international investment agencies	—	66	85	209	238	268	319
Total, other countries	330	791	957	2,196	2,364	2,955	3,554
All countries							
Direct investment	671	1,166	2,467	4,617	5,211	6,188	6,534
Portfolio investment							
Stocks	511	467	1,050	2,410	2,517	2,244	2,266
Bonds	208	142	265	475	459	474	505
Miscellaneous investment	..	-58	-18	755	779	1,015	1,427
Government of Canada credits ⁴	31	1,922	1,462	1,433	1,443	1,488	1,568
Government of Canada subscriptions to international investment agencies	—	66	85	209	238	268	319
Total, all countries	1,421	3,705	5,311	9,899	10,647	11,677	12,619

¹Figures include the equity of non-residents in assets abroad of Canadian companies but exclude investment of insurance companies and banks (held mainly, against liabilities to non-residents).

²Medium-term non-marketable United States government securities acquired under the Columbia River Treaty arrangements are shown from 1964.

³Includes deferred interest on the United Kingdom 1946 loan agreement starting from 1956 and amounting to \$101 million in 1971.

⁴Includes investment in Newfoundland prior to 1949.

^aNew series not strictly comparable with previous years.

^aIncludes United Nations bonds from 1962, which amounted to \$5 million in 1971.

21.36 Foreign long-term investment in Canada, by type of investment and by country, as at Dec. 31, 1971 and 1972
 (million dollars)

Year and type of investment	United States ¹	United Kingdom ¹	Other countries	Total investments of non-residents
1971				
Government securities				
Government of Canada	342	44	191	577
Provincial	5,057	242	769	6,068
Municipal	1,265	48	132	1,445
Total, government securities	6,664	334	1,092	8,090
Utilities				
Railways	398	364	132	894
Other (excl. public enterprises)	1,298	95	85	1,478
Total, public utilities	1,696	459	217	2,372
Manufacturing	10,833	1,029	1,099	12,961
Petroleum and natural gas	6,525	705	837	8,067
Other mining and smelting	3,360	233	479	4,072
Merchandising	1,486	311	192	1,989
Financial	2,990	919	745	4,654
Other enterprises	764	111	95	970
Miscellaneous investments	2,020 ^a	220	835	3,075
Total, investments, 1971	36,338	4,321	5,591	46,250
1972				
Government securities				
Government of Canada	449	43	174	666

21.36 Foreign long-term investment in Canada, by type of investment and by country, as at Dec. 31, 1971 and 1972 (million dollars) (concluded)

Year and type of investment	United States ¹	United Kingdom ¹	Other countries	Total investments of non-residents
Provincial	5,571	256	1,407	7,234
Municipal	1,176	46	275	1,497
Total, government securities	7,196	345	1,856	9,397
Utilities				
Railways	414	358	127	899
Other (excl. public enterprises)	1,429	98	77	1,604
Total, public utilities	1,843	456	204	2,503
Manufacturing	11,401	1,037	1,210	13,648
Petroleum and natural gas	6,824	771	942	8,537
Other mining and smelting	3,552	237	531	4,320
Merchandising	1,529	332	204	2,065
Financial	3,298	1,034	865	5,197
Other enterprises	860	127	116	1,103
Miscellaneous investments	2,073 ^a	210	880	3,163
Total, investments, 1972	38,576	4,549	6,808	49,933

Common and preferred stocks are at book values as shown in the balance sheets of the issuing companies; bonds and debentures are valued at par; and liabilities in foreign currencies are converted into Canadian dollars at par of exchange.

²Includes some investments held for residents of other countries.

²Includes Columbia River Treaty receipts.

21.37 Summary of the financial flows accounts matrix, 1973 and 1974 (million dollars)

Year and category	Financial institutions						Governments			
	Monetary authorities		Chartered banks and near-banks ¹		Other financial institutions ²		Federal government ³		Provincial and local governments ⁴	
	Use	Source	Use	Source	Use	Source	Use	Source	Use	Source
1973										
Gross domestic saving	—	1	—	461	—	314	—	1,861	—	3,131
Non-financial capital acquisition	8	—	144	—	306	—	522	—	3,915	—
Net lending or borrowing	—	-7	—	317	—	8	—	1,339	—	-784
Discrepancy	—	-8	—	50	—	-19	—	170	—	63
Net increase in financial assets	25	—	17,026	—	7,577	—	1,350	—	1,831	—
Net increase in liabilities	—	24	—	16,759	—	7,550	—	181	—	2,678
Net financial investment	—	1	—	267	—	27	—	1,169	—	-847
Official international reserves	-467	—	—	—	—	—	—	—	—	—
Canadian currency and deposits	—	931	850	11,072	433	223	-476	65	229	—
Foreign currency and deposits	—	—	3,609	4,816	115	—	2	—	-76	—
Consumer credit	—	—	2,235	—	454	—	—	—	—	—
Other receivables or payables	—	—	—	—	24	44	1	-7	-8	19
Bank and other loans	-2	—	5,217	100	1,322	8	638	62	201	683
Short-term debt instruments ⁵	188	—	356	65	-199	835	-6	530	-2	-190
Mortgages	—	—	4,850	—	1,940	-1	—	—	181	6
Canadian bonds	420	—	-356	344	1,817	503	1,035	-636	332	2,107
Life insurance and pensions	—	—	—	—	—	3,638	—	-26	—	—
Claims on associated enterprises	135	-847	48	42	659	1,575	-57	17	784	-40
Canadian stocks	—	—	38	78	941	198	152	—	22	—
Foreign securities	—	—	17	—	-122	—	—	—	—	—
Other assets or liabilities	-249	-60	162	242	193	527	62	176	168	93
Official monetary reserve offsets	—	—	—	—	—	—	—	—	—	—
	Non-financial corporations ⁶		Persons, unincorporated business and residual		Rest of the world		Total			
	Use	Source	Use	Source	Use	Source	Use	Source	Use	Source
Gross domestic saving	—	11,902	—	9,357	—	787	—	—	—	27,814
Non-financial capital acquisition	17,077	—	5,480	—	362	—	27,814	—	—	—
Net lending or borrowing	—	-5,175	—	3,877	—	425	—	—	—	—
Discrepancy	—	-942	—	686	—	—	—	—	—	—
Net increase in financial assets	6,660	—	16,829	—	4,914	—	56,212	—	—	—
Net increase in liabilities	—	10,893	—	13,638	—	4,489	—	56,212	—	—
Net financial investment	—	-4,233	—	3,191	—	425	—	—	—	—
Official international reserves	—	—	—	—	—	-467	—	-467	—	-467
Canadian currency and deposits	220	—	10,802	—	233	—	12,291	—	12,291	—
Foreign currency and deposits	381	—	1,078	—	3,398	3,691	8,507	—	8,507	—
Consumer credit	104	—	47	2,840	—	—	2,840	—	2,840	—
Other receivables or payables	3,321	2,693	—	589	—	—	3,338	—	3,338	—
Bank and other loans	164	2,787	—	3,534	342	708	7,882	—	7,882	—
Short-term debt instruments ⁵	518	73	418	—	40	—	1,313	—	1,313	—
Mortgages	33	367	—	6,631	—	—	7,003	—	7,003	—
Canadian bonds	-62	1,899	392	44	683	—	4,261	—	4,261	—
Life insurance and pensions	—	—	3,612	—	—	—	3,612	—	3,612	—
Claims on associated enterprises	961	817	—	—	722	590	3,252	—	2,154	—
Canadian stocks	95	1,004	-1,080	—	14	—	182	—	1,280	—
Foreign securities	35	—	37	—	—	-33	-33	—	-33	—
Other assets or liabilities	890	1,253	1,523	—	-518	—	2,231	—	2,231	—
Official monetary reserve offsets	—	—	—	—	—	—	—	—	—	—

21.37 Summary of the financial flows accounts matrix, 1973 and 1974 (million dollars) (concluded)

Year and category	Financial institutions						Governments			
	Monetary authorities		Chartered banks and near-banks ¹		Other financial institutions ²		Federal government ³		Provincial and local governments ⁴	
	Use	Source	Use	Source	Use	Source	Use	Source	Use	Source
1974										
Gross domestic saving	—	1	—	410	—	280	—	2,953	—	4,191
Non-financial capital acquisition	17	—	213	—	292	—	1,013	—	4,816	—
Net lending or borrowing	—	-16	—	197	—	-12	—	1,940	—	-625
Discrepancy	—	-6	—	153	—	76	—	183	—	-213
Net increase in financial assets	1,458	—	16,698	—	9,457	—	7,010	—	3,521	—
Net increase in liabilities	—	1,468	—	16,654	—	9,545	—	5,253	—	3,933
Net financial investment	—	-10	—	44	—	-88	—	1,757	—	-412
Official international reserves	24	—	—	—	—	—	—	—	—	—
Canadian currency and deposits	—	1,175	1,079	14,066	30	139	2,559	86	50	—
Foreign currency and deposits	—	—	855	1,822	88	—	9	—	9	—
Consumer credit	—	—	2,361	—	345	—	—	—	—	—
Other receivables or payables	—	—	—	—	42	40	9	31	31	137
Bank and other loans	8	—	6,072	-70	2,397	553	514	36	205	730
Short-term debt instruments ⁵	609	—	308	82	947	1,251	—	940	4	-216
Mortgages	—	—	4,743	—	2,507	27	17	—	228	5
Canadian bonds	494	—	854	263	2,022	395	1,247	3,439	463	3,162
Life insurance and pensions	—	—	—	—	—	3,721	—	-20	—	—
Claims on associated enterprises	244	236	341	4	530	2,590	1,944	59	1,595	7
Canadian stocks	—	—	71	180	448	281	78	—	13	—
Foreign securities	—	—	19	—	-38	—	8	—	—	—
Other assets or liabilities	79	57	-5	307	139	548	625	682	923	108
Official monetary reserve offsets	—	—	—	—	—	—	—	—	—	—
	Non-financial corporations ⁵		Persons, unincorporated business and residual		Rest of the world		Total			
	Use	Source	Use	Source	Use	Source	Use	Source	Use	Source
Gross domestic saving	—	13,210	—	11,723	—	2,440	—	—	—	35,208
Non-financial capital acquisition	22,338	—	5,956	—	563	—	35,208	—	—	—
Net lending or borrowing	—	-9,128	—	5,767	—	1,877	—	—	—	—
Discrepancy	—	-779	—	586	—	—	—	—	—	—
Net increase in financial assets	10,405	—	18,507	—	3,306	—	70,362	—	—	—
Net increase in liabilities	—	18,754	—	13,326	—	1,429	—	70,362	—	—
Net financial investment	—	-8,349	—	5,181	—	1,877	—	—	—	—
Official international reserves	—	—	—	—	—	24	—	24	—	—
Canadian currency and deposits	792	—	10,543	—	413	—	15,466	—	15,466	—
Foreign currency and deposits	-90	—	146	—	90	-715	1,107	—	1,107	—
Consumer credit	60	—	17	—	—	—	2,783	—	2,783	—
Other receivables or payables	5,746	5,937	—	-317	—	—	5,828	—	5,828	—
Bank and other loans	340	3,192	—	3,886	278	1,487	9,814	—	9,814	—
Short-term debt instruments ⁵	-139	984	1,054	—	258	—	3,041	—	3,041	—
Mortgages	33	596	—	6,900	—	—	7,528	—	7,528	—
Canadian bonds	-103	2,393	2,767	74	1,982	—	9,726	—	9,726	—
Life insurance and pensions	—	—	3,701	—	—	—	3,701	—	3,701	—
Claims on associated enterprises	2,009	2,167	—	—	494	645	7,157	—	5,708	—
Canadian stocks	226	845	-877	—	-102	—	-143	—	1,306	—
Foreign securities	52	—	-53	—	—	-12	-12	—	-12	—
Other assets or liabilities	1,479	2,640	1,209	—	-107	—	4,342	—	4,342	—
Official monetary reserve offsets	—	—	—	—	—	—	—	—	—	—

¹Near-banks are Quebec savings banks, credit unions, caisses populaires, mortgage and trust companies.²Insurances, trustee pension funds, and other private and public financial institutions.³Includes Canada Pension Plan.⁴Includes hospitals and Quebec Pension Plan.⁵Includes government enterprises.⁶Includes Government of Canada, provincial and municipal governments treasury bills.

Sources

21.1 - 21.9 Gross National Product Division, System of National Accounts (Current) Branch, Statistics Canada.

21.10 - 21.13 Industry Product Division, System of National Accounts (Current) Branch, Statistics Canada.

21.14 Input-Output Division, System of National Accounts (Structural) Branch, Statistics Canada.

21.15 - 21.30 Prices Division, General Statistics Branch, Statistics Canada.

21.31 - 21.36 Balance of Payments Division, System of National Accounts (Current) Branch, Statistics Canada.

21.37 Financial Flows and Multinational Enterprise Division, System of National Accounts (Current) Branch, Statistics Canada.

Appendix 1

Functions of government organizations and related agencies

A summary organization chart of the federal government appears in Chapter 3.

Agricultural Products Board. The Agricultural Products Board was established under authority of the Emergency Powers Act by Order in Council PC 3415 of July 31, 1951, to administer contracts with other countries to buy, or sell, agricultural products, and to carry out other commodity operations as considered necessary or desirable as determined by Canada's needs and requirements. The Board was re-established under the Agricultural Products Board Act in 1952 and operates now under RSC 1970, c.A-5. Under the Act the Minister may require any staff of the Department of Agriculture to provide services for the Board.

Agricultural Stabilization Board. Established in 1958 as a Crown corporation under the Agricultural Stabilization Act (RSC 1970, c.A-9), the Board is empowered to stabilize prices of agricultural products both to assist the industry in realizing fair returns for labour and investment and to maintain a fair relationship between the prices received by farmers and the costs of goods and services that they buy. Programs under the Act are administered by Board staff with assistance from the Canada Department of Agriculture. The Board reports to Parliament through the Minister of Agriculture.

Air Canada. Formerly Trans-Canada Air Lines, Air Canada was incorporated by Act of Parliament in 1937 (RSC 1970, c.A-11) to provide a publicly owned air transportation service, with powers to carry on its business throughout Canada and outside Canada. The corporation now maintains passenger, mail and commodity traffic services over nation-wide routes as well as services to the United States, Britain, Ireland, Belgium, France, Switzerland, the Federal Republic of Germany, Austria, Denmark, the USSR, Czechoslovakia, Bermuda, the Bahamas, Jamaica, Antigua, Barbados and Trinidad. Air Canada is responsible to Parliament through the Minister of Transport.

Anti-dumping Tribunal. Under the Anti-dumping Act (RSC 1970, c.A-15, as amended by SC 1970-71, c.3), the Anti-dumping Tribunal is declared to be a court of record and makes formal inquiry into the impact of dumping on production in Canada. Within 90 days of a preliminary determination of dumping by the Deputy Minister of National Revenue for Customs and Excise, the Tribunal must make an order or finding on the question of material injury, threat of material injury or retardation to production in Canada of like goods. Also, the Tribunal may at any time after the date of an order or a finding made by it review, rescind, change, alter or vary the said order or finding or may rehear any matter before deciding it. In addition, the Governor in Council may request the Tribunal to investigate and report on any matter relative to the importation of goods into Canada that may cause or threaten injury to the production of any goods in this country.

The Tribunal consists of a chairman, four other members, a secretary, and research and support staff. Its offices are located in Ottawa. The Tribunal carries out its responsibilities under the Act by holding public and in camera hearings, personal interviews, in-house research, statistical and financial analysis, interviews with Canadian manufacturers and associations, and inspection of facilities. The Tribunal reports to Parliament through the Minister of Finance.

Army Benevolent Fund Board. The Army Benevolent Fund Board, established by the Army Benevolent Fund Act (RSC 1970, c.A-16), administers the Army Benevolent Fund, a special account set up in the Consolidated Revenue Fund. The Board awards grants from the special account to veterans or their dependents for relief, if none is available from government sources, and for educational assistance, contingent on need and continued progress. The Board has five members appointed by the Governor in Council, one of whom is nominated by the Royal Canadian Legion and one by the National Council of Veterans Associations in Canada. Head office is in Ottawa. The Board reports to Parliament through the Minister of Veterans Affairs.

Atlantic Development Council. Created under the 1969 Government Organization Act (SC 1968-69, c.28), the Atlantic Development Council is composed of 11 members representative of the area appointed by the Governor in Council to advise the Minister of Regional Economic Expansion on plans and policies for economic expansion and social adjustment in the Atlantic provinces, and to carry out feasibility studies and evaluate policies or programs submitted within the framework of an over-all strategy for the development of the region.

Atomic Energy Control Board. By Act of Parliament (RSC 1970, c.A-19) proclaimed October 1946, the regulation and control of atomic energy in Canada was placed under the Atomic Energy Control Board. The Board reports to Parliament through the Minister of Energy, Mines and Resources.

Atomic Energy of Canada Limited. This Crown company was incorporated in February 1952 under the Atomic Energy Control Act, 1946 (RSC 1970, c.A-19) to take over from the National Research Council on April 1, 1952 the operation of the Chalk River project. The main activities of the company are scientific research and development in the atomic energy field, the development of economic nuclear power, the operation of nuclear reactors, the marketing of nuclear power systems, and the production of radioactive isotopes and associated equipment such as cobalt-60 beam therapy units for the treatment of cancer. AECL is responsible for the provision of sufficient quantities of heavy water to meet the demands of the CANDU reactor program, the construction and operation of heavy water plants, and research and development involving present and prospective heavy water production methods. The company reports to Parliament through the Minister of Energy, Mines and Resources.

Bank of Canada. Legislation of 1934 (RSC 1970, c.B-2) provided for the establishment of a central bank in Canada to regulate credit and currency, to control and protect the external value of the Canadian dollar and to stabilize the level of production, trade, prices and employment as far as may be possible within the scope of monetary action. The Bank acts as the fiscal agent of the Government of Canada, manages the public debt and has the sole right to issue notes for circulation in Canada. It is managed by a board of directors appointed by the government and composed of a governor, a deputy governor and 12 directors; the Deputy Minister of Finance is also a member of the board (ex officio). The Bank reports to Parliament through the Minister of Finance.

Bilingual Districts Advisory Board. The Official Languages Act (RSC 1970, c.O-2) authorizes the establishment by proclamation of the Governor in Council of federal bilingual districts, in which federal services will be provided in English and French. For a territory to be declared a bilingual district, the two official languages must be spoken by residents of the area and at least 10% of the total population must speak a mother tongue which is the official language of the linguistic minority within the area. An area may be established as a federal bilingual district, even if it does not reach the required percentage, if federal services were already customarily available to residents in both official languages before the Act came into force. To determine the boundaries of these districts, the Act requires the federal government to set up an Advisory Board of five to 10 commissioners, representing the several provinces or regions of Canada. The Board must be constituted as soon as possible after each decennial census and makes its recommendations based on census statistics, such public hearings as it considers necessary and after consultation with provincial governments. Its report is submitted through the Secretary of State to the Governor in Council who causes it to be tabled in Parliament.

Blue Water Bridge Authority. The Bridge Authority was created by the Blue Water Bridge Authority Act (SC 1964, c.6). It is responsible for the operation of the Canadian portion of the bridge spanning the St. Clair River from Point Edward, Ont. to Port Huron, Mich. Tolls set are subject to the approval of the Canadian Transport Commission. The Authority is a non-profit organization and all toll moneys must be used for the operation and maintenance of the present bridge or for the building of a new one. It is not an agent of the Crown but members of the Authority are appointed by the Governor in Council on the recommendation of the Minister of Transport with terms of office ranging from one to five years.

Board of Examiners for Dominion Land Surveyors. Established under the Canada Lands Survey Act (RSC 1970, c.L-5), the Board examines candidates: for admission as articulated pupils; for commissions as Dominion Land Surveyors; or for certificates as Dominion Topographical Surveyors. It is also responsible for the discipline of Dominion Land Surveyors. The Board has three members appointed by the Governor in Council, one of whom, the chairman, is the Surveyor General of Canada Lands; it is part of the Department of Energy, Mines and Resources.

Bureau of Pensions Advocates. The Bureau was established in 1971 by amendments to the Pension Act (SC 1970-71, c.31). Composed of a Chief Pensions Advocate appointed by the Governor in Council, and Pensions Advocates, officers and employees appointed under the Public Service Employment Act, it administers Part II of the Pension Act. Its function is to provide an independent professional legal aid service to applicants for awards under the Pension Act. The Bureau's head office is in Ottawa; there are district offices in 18 major centres across Canada. It reports to Parliament through the Minister of Veterans Affairs.

Canada Council. The Council was established by Order in Council dated April 15, 1957, under the terms of the Canada Council Act (RSC 1970, c.C-2) assented to March 28, 1957. It is composed of a chairman, a vice-chairman and 19 other members, a director and an associate director. The function of the Council is to encourage the arts, humanities and social sciences in Canada, mainly through a broad program of fellowships and grants. Its principal sources of income are an annual grant from the government, which

amounted to \$36.5 million for the year ended March 31, 1974, and an Endowment Fund, originally of \$50 million, which has an annual yield of over \$5 million. In the making, managing and disposing of investments under the Act, the Council has the advice of an investment committee of five, including the chairman and another member of the Council. The proceedings of the Council are reported each year to Parliament through the Secretary of State.

Canada Deposit Insurance Corporation. The Corporation was established by legislation (RSC 1970, c.C-3), which received Royal Assent on February 17, 1967. It is empowered to insure Canadian currency deposits other than those belonging to the Government of Canada, up to \$20,000 per person, in banks, federally incorporated trust and loan companies that accept deposits from the public, and in similar provincially incorporated institutions that are authorized by their provincial governments to apply for such insurance. The Corporation is also empowered to act as a lender of last resort for member institutions. The board of the Corporation comprises a chairman, appointed by the Governor in Council, and four other directors who hold the positions of Governor of the Bank of Canada, Deputy Minister of Finance, Superintendent of Insurance and Inspector General of Banks. It reports to Parliament through the Minister of Finance.

✓ **Canada Development Corporation.** The Corporation was established in 1971 by the Canada Development Corporation Act (SC 1970-71, c.49) to develop and maintain strong Canadian controlled and managed corporations in the private sector of the economy and to give Canadians greater opportunities to invest and participate in the economic development of Canada. Its affairs are administered by a board of 21 directors. The authorized capital of the Corporation consists of 200 million common shares without par value and \$1,000 million in preferred shares. As at April 4, 1975, 30.7 million common shares and 10 million Class A preferred shares had been issued.

During 1972 the Corporation acquired all the shares of Polysar Limited and a 35% interest in Venturetek International Limited. In 1973 the Corporation acquired 30.5% of the shares of Texasgulf Inc. and formed Connlab Holdings Limited, which in turn owns 100% of Connaught Laboratories Limited, 75% of A/S Dumex, 70% of Omnimed Inc. and 70% of Raylo Chemicals Limited. Also in 1973 the Corporation was instrumental in the formation of two new venture capital companies, Ventures West Capital Ltd. and Innocan Investments Ltd. of which it owns 49% and 40%, respectively. The Corporation is also a participant in the Gas-Arctic Northwest Project Study Group. The Corporation is not an agency of the Crown and is not subject to the provisions of the Financial Administration Act. As at December 31, 1974 consolidated assets amounted to \$899.6 million, an increase of 28% over the preceding year, and the shareholders' equity amounted to \$548.3 million. Revenue for the year ended on that date totalled \$466.3 million and the net income \$59.0 million, compared to \$296.7 million and \$18.7 million, respectively for the preceding year.

Canada Labour Relations Board. Established under the authority of the Canada Labour Code Part V (RSC 1970, c.L-1), the Canada Labour Relations Board administers provisions of the code with respect to workers in industries under federal jurisdiction. The Board consists of a chairman, a vice-chairman, an additional vice-chairman where considered advisable by the Governor in Council and not less than four or more than eight other members.

Canada Manpower and Immigration Council. Operating under RSC 1970, c.C-4, the Canada Manpower and Immigration Council consists of a chairman and not more than 15 members appointed by the Governor in Council. The Council advises the Minister of Manpower and Immigration on all matters pertaining to the effective utilization and development of manpower resources in Canada, including immigrants to Canada and their adjustment to Canadian life.

Canadian Arsenal Limited. The principal function of this Crown corporation is to operate the government-owned facilities for the production of certain defence materiel. It was established under the Companies Act by Letters Patent dated September 20, 1945, and is subject to the Government Companies Operation Act (RSC 1970, c.G-7) and certain provisions of the Financial Administration Act (RSC 1970, c.F-10). It reports to Parliament through the Minister of Supply and Services.

Canadian Broadcasting Corporation. The CBC was established by Act of Parliament in 1936, replacing an earlier public broadcasting agency, the Canadian Radio Broadcasting Commission, created in 1932. The Broadcasting Act of 1968 (RSC 1970, c.B-11) describes the CBC as "established by Parliament for the purpose of providing the national broadcasting service".

The Corporation has a president and 14 other directors appointed by the Governor in Council. The president is the chief executive officer. The executive vice-president is appointed by the Corporation on the recommendation of the president and with the approval of the Governor in Council. He is responsible to the president for the management of broadcasting operations in accordance with policies prescribed by the Corporation.

CBC operations are financed by public funds voted annually by Parliament, with supplementary revenue obtained from commercial advertising. The CBC's accounts are audited annually by the Auditor General of Canada and the Corporation reports to Parliament through the Secretary of State of Canada.

Canadian Commercial Corporation. Established in 1946 by Act of Parliament (RSC 1970, c.C-6), the Canadian Commercial Corporation is wholly owned by the Government of Canada. Initially it assumed the undertaking of the (then) Canadian Export Board covering procurement in Canada of goods and services on behalf of foreign governments and United Nations relief agencies. In 1947 responsibility for procurement of the requirements of the Department of National Defence was transferred from the Department of Reconstruction and Supply to the Corporation which fulfilled these additional functions until the formation of the Department of Defence Production in 1951. In 1963 the staff of the Corporation was integrated with that of the Department of Defence Production, now part of the Department of Supply and Services, which provides all the management and services required by the Corporation.

The Corporation continues to act primarily as the Canadian government contracting and procurement agency on behalf of foreign countries purchasing defence or other supplies and services from Canada on a government-to-government basis, with increasing emphasis on non-defence goods. It is also in a position to assist persons in Canada to obtain goods and commodities from outside Canada and to dispose of goods and commodities that are available for export from Canada. It reports to Parliament through the Minister of Supply and Services.

Canadian Consumer Council. The Council was established in 1968 (RSC 1970, c.C-27) to advise the Minister of Consumer and Corporate Affairs on all facets of consumerism. It meets with the Minister several times a year and consists of 24 members representing all segments of the population and all areas of Canada.

Canadian Dairy Commission. This Commission, which reports to Parliament through the Minister of Agriculture, was established on December 2, 1966 (RSC 1970, c.C-7) to provide efficient producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment and thus ensure that consumers of dairy products would have a continuous and adequate supply of dairy products of high quality. The Commission consists of three members appointed by the Governor in Council and operates with the advice of a nine-member consultative committee appointed by the Minister.

Canadian Film Development Corporation. This Corporation, established by Act of Parliament in March 1967 (RSC 1970, c.C-8), fosters and promotes the development of a feature film industry in Canada through investment in productions, loans to producers, awards for outstanding accomplishments, and advice and assistance in distribution and administrative matters. It works in co-operation with other federal departments and agencies and with provincial departments and agencies having like interests and finances its operations from a film development advance account in the Consolidated Revenue Fund. The Corporation consists of the Government Film Commissioner (ex officio) and six other members appointed by the Governor in Council for terms of five years. The Corporation reports to Parliament through the Secretary of State.

Canadian Government Specifications Board. Created in 1934 under the authority of the National Research Council Act (RSC 1970, c.N-14) as the Canadian "Government Purchasing Standards Committee", this interdepartmental agency's name was changed in 1948 to the Canadian Government Specifications Board (CGSB).

In 1965, responsibility for the CGSB's operation was transferred by Order in Council to the Department of Defence Production, now part of the Department of Supply and Services. Membership of the Board was then revised to include the Secretary of the Treasury Board, the President of the National Research Council, and the Deputy Ministers of Consumer and Corporate Affairs, National Defence, Public Works, Supply and Services, Transport, and Industry, Trade and Commerce. The Deputy Minister of Supply was designated Chairman of the Board.

The role of the CGSB has expanded to provide standards in support of government programs in procurement, consumer requirements, legislation, technical practices, test procedures and international standardization in more than a hundred fields, many of which are of national interest. It has compiled more than 1,800 standards which are available in both official languages. The technical process of developing and revising standards is performed by some 300 committees and about 3,000 competent members representing the relevant interests including governments, producers, consumers, research and testing agencies, educational institutions, professional technical and trade societies. The Board works closely with the Standards Council of Canada and the Metric Commission in relation to national and international standardization and the metric conversion program. It is accredited by the Council as a national standards writing organization.

Canadian Grain Commission. The Canada Grain Act (SC 1970-71, c.7) came into force on April 1, 1971, repealing the Canada Grain Act, 1930 (RSC 1952, c.25) and replacing the former Board of Grain Commissioners for Canada. The Commission reports to Parliament through the Minister of Agriculture, as did the Board, and the responsibilities are unchanged. The Commission provides general supervision over the physical handling of grain in Canada by licensing elevators and elevator operators, by inspecting, grading and weighing grain received at and shipped from terminal elevators, and by other services associated with regulating the grain industry. It manages and operates the six Canadian government elevators in western Canada.

The Commission consists of a chief commissioner and two commissioners. Its objects are, in the interests of grain producers, to establish and maintain standards of quality for Canadian grain, to ensure a dependable commodity for domestic and export markets and to regulate grain handling in Canada. It has authority to conduct investigations and hold hearings on matters coming within its purview, and to undertake, sponsor and promote research in relation to grain and grain products. The Commission is part of the Canada Department of Agriculture, but submits a separate report to the Minister.

Canadian International Development Agency. The operation of Canada's international development programs are the responsibility of the Canadian International Development Agency. CIDA was originally established by Order in Council PC 1960-1476 and until 1968 was known as the External Aid Office. The Agency is under the direction of a President and a governing body — the Canadian International Development Board — and reports to Parliament through the Secretary of State for External Affairs.

Canadian International Development Board. The Board is the governing council responsible for directing the operations of the Canadian International Development Agency (CIDA). It is made up of the Under-Secretary of State for External Affairs, the Deputy Ministers of the Department of Finance and the Department of Industry, Trade and Commerce, the Governor of the Bank of Canada and the Secretary of the Treasury. It meets under the chairmanship of CIDA's President.

Canadian Livestock Feed Board. This Board is a Crown corporation reporting to Parliament through the Minister of Agriculture. Established under the Livestock Feed Assistance Act in 1967, its objectives are to ensure: (a) the availability of feed grain in eastern Canada and British Columbia, (b) the availability of adequate storage space in eastern Canada, and (c) the reasonable stability and fair equalization of feed grain prices in eastern Canada and in British Columbia. The Board administers the Feed Freight Equalization Program under which a portion of the costs of transportation of feed grains is paid. The Act also stipulates that it is the duty of the Board to make a continuing study of feed grain requirements and availability in these areas, as well as to study and make recommendations to the Minister with respect to requirements for additional feed grain storage facilities in eastern Canada. It is also the duty of the Board to advise the government on all matters pertaining to the stabilization and fair equalization of feed grain prices to livestock feeders and, to the greatest extent possible consistent with its objectives, to consult and co-operate with all departments, branches or other agencies of the Government of Canada or any province having duties, aims or objects related to those of the Board.

In addition the Board has been assigned responsibilities under the national feed grain policy which became effective on August 1, 1974. The Board is called upon to examine selling practices east of Thunder Bay and to supervise the domestic market outside the designated region of the Canadian Wheat Board. The Board designates the chairman of the committee supervising reserve stocks of feed grains presently held in Thunder Bay and Halifax and will receive full information on domestic purchases in the west and will have power to exclude from the grain transfer business anyone who disobeys its rules. If the Board finds bad pricing or supply practices, it will be permitted to intervene directly as buyer or seller of feed grain. This is supported by the Livestock Feed Assistance Act which stipulates that the Board may buy, transport, store and sell feed grains in eastern Canada and British Columbia when authorized to do so by the Governor in Council.

The Board is composed of four active members with headquarters in Montreal and branch offices in Ottawa and Vancouver. A seven-member Advisory Committee, appointed by the Governor in Council, and representing livestock feeders in eastern Canada and British Columbia, meets periodically with the Board to review and discuss all aspects of feed grain supplies and prices, and policies related thereto. This Committee may make recommendations to the Minister and the Board.

Canadian National Railways. The Canadian National Railway Company was incorporated to administer an undertaking made up mainly of railway and other service facilities and activities. It includes the assets of the former Grand Trunk Railway Company of Canada and its subsidiaries, and of the Canadian Northern System, as well as certain Crown-owned properties of which the management and operation have been entrusted to Canadian National.

The primary statutes governing its organization and operation are the Canadian National Railways Act (RSC 1970 c.C-10) and the Railway Act (RSC 1970 c.R-2). The direction and control of the Company and its

undertaking are vested in a board of directors; its principal officers are the Chairman of the Board and the President, the latter being the Chief Executive Officer.

Canadian Patents and Development Limited (CPDL). This Crown corporation was set up in 1947 under an amendment to the National Research Council Act passed in 1946. The purpose of the company, which is a subsidiary of the National Research Council, is to patent and license new products and processes that come out of NRC research, research of other government departments and agencies, and research of Canadian universities. Proposals for patents are assessed with regard to originality, existence of similar patented products or processes, commercial appeal, humanitarian or scientific value, and cost of developing, promoting and marketing. CPDL initiates and finances the development of many inventions to a stage where it is economically possible for private industry to carry them through to production and sale, thus bridging the gap between research and industry. The company, whose head office is located in Ottawa, reports to Parliament through a designated Minister.

Canadian Penitentiary Service. The penitentiary service operates under the Penitentiary Act (RSC 1970, c.P-6) and is under the jurisdiction of the Solicitor General of Canada. It is responsible for all federal penitentiaries and for the care and training of persons committed to those institutions. The Commissioner of Penitentiaries, under the direction of the Solicitor General, has control and management of the Service and all matters connected therewith.

Canadian Pension Commission. This Commission, established in 1933 by amendments to the Pension Act (RSC 1970, c.P-7), replaced the Board of Pension Commissioners, the first organization created to deal solely with war pensions for service in Canada's Armed Forces. The Commission's main function is the administration of the Pension Act under which it adjudicates on all claims for pensions in respect of disability or death arising out of service in Canada's Armed Forces; and Parts I to X and Part XII of the Civilian War Pensions and Allowances Act, which provide for the payment of pensions in respect of death or disability arising out of civilian service directly related to the prosecution of World War II. It also adjudicates on claims for pension under various other measures, authorizes and pays monetary grants accompanying certain gallantry awards bestowed on members of the Armed Forces and administers various trust funds established by private individuals for the benefit of veterans and their dependents. The Commission consists of eight to 14 commissioners and up to 10 ad hoc commissioners appointed by the Governor in Council. Its chairman has the rank of a Deputy Minister and it reports to Parliament through the Minister of Veterans Affairs.

Canadian Permanent Committee on Geographical Names. This Committee deals with all questions of geographical nomenclature affecting Canada and undertakes research and investigation into the origin and usage of geographical names. Its membership includes representatives of federal mapping agencies and other federal offices concerned with nomenclature and a representative appointed by each province. The Committee is administered by the Department of Energy, Mines and Resources.

Canadian Radio-Television Commission (CRTC). This Commission, established under the provisions of the Broadcasting Act, 1967-68 (RSC 1970, c.B-11), regulates and supervises all aspects of the Canadian broadcasting system. The executive committee, after consultation with the part-time members in attendance at a Commission meeting, may issue broadcasting licences or renewal licences for such terms, not exceeding five years and subject to such conditions related to the circumstances of the licensee, as the executive committee deems appropriate for the implementation of the broadcasting policy enunciated in Section 3 of the Broadcasting Act. Under the same circumstances, the executive committee may, on application by a licensee, amend any conditions of a broadcasting licence already issued. The Commission usually holds public hearings in connection with issuing, suspending, etc., licences.

The CRTC consists of five full-time members and 10 part-time members chosen regionally and appointed by the Governor in Council. It reports to Parliament through the Minister of Communications.

Canadian Saltfish Corporation. The Canadian Saltfish Corporation was established under the Saltfish Act (SC 1969-70, c.32) and became operative on May 4, 1970. Its main purpose is to improve the earnings of fishermen and of other primary producers of salt-cured fish, through the production or purchase, processing and marketing of salt cod from participating provinces.

The Corporation, with head office at St. John's, Nfld., consists of a board of directors composed of a chairman, whose office is in Ottawa, a president who is general manager, one director for each participating province and not more than five other directors, all of whom are appointed by the Governor in Council. It is assisted by an advisory committee of 15 members, also appointed by the Governor in Council, at least half of whom are fishermen or representatives of fishermen. The limit of the Corporation's financial obligations is \$10 million and the Corporation is required to operate without grant appropriation from

Parliament. It is empowered to distribute excess of income over expenses to participating fishermen and other primary producers. The Corporation reports to Parliament through the Minister of State (Fisheries).

Canadian Transport Commission. The Canadian Transport Commission, a court of record created in 1967 by the National Transportation Act (RSC 1970, c.N-17), took over powers formerly vested in the Board of Transport Commissioners, the Air Transport Board and the Canadian Maritime Commission, giving it regulatory and judicial functions with respect to almost all aspects of railway, commercial air, merchant marine, telecommunication and commodity pipeline services. The Act also provides for the regulation of extra-provincial motor vehicle transport but the applicable parts of the Act were not yet in effect as at December 1974. In addition, the Commission is responsible for undertaking studies and research into the economic aspects of all modes of transport within, into or from Canada.

Six committees perform the Commission's regulatory duties under the Act: the Railway Transport Committee; the Air Transport Committee; the Water Transport Committee; the Telecommunication Committee; the Motor Vehicle Transport Committee; and the Commodity Pipeline Transport Committee.

The Commission consists of not more than 17 members, of whom one is president and two are vice-presidents, appointed by the Governor in Council for a maximum of 10 years; it reports to Parliament through the Minister of Transport in respect of transportation matters, and through the Minister of Communications in respect of telecommunications matters.

Canadian Wheat Board. The Board was incorporated in 1935 under the Canadian Wheat Board Act (RSC 1970, c.C-12) to market, in an orderly manner, in the interprovincial and export trade, grain grown in Canada. Its powers include authority to buy, take delivery of, store, transfer, sell, ship or otherwise dispose of grain. Except as directed by the Governor in Council, the Board was not originally authorized to buy grain other than wheat but, since August 1, 1949, it may also buy oats and barley if authorized to do so by Regulation approved by the Governor in Council. Only grain produced in the designated area, which includes Manitoba, Saskatchewan, Alberta and parts of British Columbia is purchased by the Board, which controls the delivery of grain into elevators and railway cars in that area as well as the interprovincial movement for export of wheat, oats and barley generally. The Board reports to Parliament through a designated Minister, at present the Minister of Transport.

Cape Breton Development Corporation. This Corporation was created by an Act of Parliament, assented to on July 7, 1967 (RSC 1970, c.C-13) and came into existence by proclamation on October 1, 1967, as a proprietary Crown corporation. The Corporation was established to rationalize the coal industry of Cape Breton Island and to broaden the base of the area's economy by assisting the financing and development of industry to provide employment outside the coal mines.

The Cape Breton Development Corporation acquired the former interests of the major coal producer in the Sydney coalfield and is operating three mines and developing one new mine. It is active in development of the tourist industry as well as primary products and various secondary industries.

The Act provides for a board of directors, comprising a chairman, a president and five other directors. Head office is located in Sydney, NS. The Corporation reports to Parliament through the Minister of Regional Economic Expansion. Its operations are financed by the Government of Canada.

Central Mortgage and Housing Corporation. This Crown agency was incorporated by Act of Parliament (RSC 1952, c.46) in December 1945 to administer the National Housing Act. Under the National Housing 1954 Act (RSC 1970, c.C-16), the Corporation insures mortgage loans made by approved lenders for new and existing housing and makes direct loans in resource communities and rural areas; guarantees home improvement loans made by banks; undertakes subsidized rental housing projects and land assembly developments under federal-provincial arrangements; offers loans and subsidies for public housing projects; makes loans for land assembly projects to be used for general residential development; makes loans to individuals or organizations for low-rental housing projects; makes loans for student housing and to provinces and municipalities with provincial concurrence for sewage treatment projects designed to eliminate water and soil pollution; makes contributions and loans to provinces and municipalities for urban renewal operations; conducts housing research; encourages urban planning; and owns and manages rental housing units including those built for war workers and veterans. The Corporation arranges for and supervises construction of housing projects on behalf of the Department of National Defence and other government departments and agencies. It is responsible to Parliament through the Minister of State for Urban Affairs.

Columbia River Treaty Permanent Engineering Board. The Permanent Engineering Board, consisting of two Canadians and two Americans, was established under Article XV of the 1964 Columbia River Treaty between Canada and the United States. The Board assembles records and inspects and reports at least annually on matters within the scope of the Treaty. It reports to Parliament through the Minister of Energy, Mines and Resources.

Commissioner of Official Languages. Appointed by Parliament pursuant to the Official Languages Act (RSC 1970, c.O-2), the Commissioner holds office for a term of seven years, renewable until age 65. He is responsible to Parliament for ensuring recognition of the equal status of French and English as Canada's official languages and for ensuring compliance with the spirit and intent of the Act in all the institutions of the Parliament and Government of Canada. To this end, the Commissioner is empowered to receive and investigate complaints from the public, and, on his own initiative, to conduct investigations into possible violations of the Act. The results of investigations must be communicated to the complainants and the institutions concerned and may, at the Commissioner's discretion, be the subject of a special report to Parliament. The Commissioner reports annually to Parliament on the conduct of his Office and may make recommendations for changes in the Act as he deems necessary or desirable.

Commonwealth War Graves Commission. The Commission operates under a Royal Charter dated May 21, 1917 and the new Supplemental Charter dated June 8, 1964. Under these the Commission is entrusted with the marking and maintaining in perpetuity the graves of those of the British Empire and Commonwealth Armed Forces who died during World Wars I and II. Those with no known graves are commemorated by name on memorials to the missing. The Canadian High Commissioner in London, England is the official Commission member for Canada and the Minister of Veterans Affairs is the Agent of the Commission in Canada.

Company of Young Canadians. Established in 1966 as a Crown corporation (RSC 1970, c.C-26), the Company of Young Canadians is a collection of full-time volunteers between the ages of 18 and 28 who work with community groups on projects concerned with agriculture, co-operatives (credit unions, housing, consumer and vegetable production), tenants, urban planning and native projects. The volunteers receive training and a monthly living allowance from the CYC and are chosen directly by the community group seeking CYC support along with the local CYC field staff. The volunteer's prime responsibility is to this community reference group. CYC field staff are located in every province and in the Yukon Territory and Northwest Territories to assist groups in developing projects and in the training of volunteers.

Both the CYC's nine-member administrative Council and the Executive Director, who is responsible for supervision and management of the Company, are appointed by the Governor in Council. The Company reports to Parliament through the Secretary of State.

Copyright Appeal Board. The Board was established to provide an agency to which people using copyrighted music could direct appeals against the fees proposed by Performing Rights Societies for the use of the music. The Copyright Act (RSC 1970, c.C-30) empowers the Board to deal only with the amount of the fees that the Societies propose to collect for an ensuing calendar year. It has no authority to draft the terms and conditions of the tariffs. Hearings before the Board are conducted in a quasi-judicial manner. After considering an appeal the Board makes such alterations to the proposed statements of fees as it thinks appropriate and transmits the statements thus altered, revised or unchanged to the Minister of Consumer and Corporate Affairs. The decision of the Board is final and binding. The Copyright Appeal Board consists of three members appointed by the Governor in Council, one of whom, as chairman, must hold or have held high judicial office.

Court Martial Appeal Court. This Court was established as a superior court of record pursuant to Section 201 of the National Defence Act (RSC 1970, c.N-4). Accused persons found guilty by a court martial have the right to direct an appeal to the Court Martial Appeal Court in respect of the legality of any or all of the findings, or the legality of the whole or any part of the sentence. The Appeal Court is composed of not fewer than four judges of the Federal Court of Canada designated by the Governor in Council and such additional judges of a superior court of criminal jurisdiction as are appointed by the Governor in Council. One judge has been designated by the Governor in Council as the President. Appeals are heard by a minimum of three judges. The Court Martial Appeal Court may sit and hear appeals at any place under direction of the President. An appellant whose appeal has been wholly or partially dismissed by the Court Martial Appeal Court may, under certain circumstances, appeal to the Supreme Court of Canada; where the Court Martial Appeal Court has wholly or partially allowed an appeal, the Minister of National Defence may similarly enter an appeal to the Supreme Court of Canada.

Crown Assets Disposal Corporation. This Corporation was established in 1944 as the War Assets Corporation under the Surplus Crown Assets Act (RSC 1970, c.S-20) and is subject to the Financial Administration Act (RSC 1970, c.F-10). Its name was changed to Crown Assets Disposal Corporation in 1949. The Corporation is responsible for the sale of federal government surplus assets located in Canada and at Canadian government establishments throughout the world. It also acts as agent on behalf of foreign governments in selling their surplus property located in Canada and has agreements with a number of European countries for marketing Canadian surplus assets located abroad. While the Corporation's normal method of sale is to invite written offers, on occasion it sells by public auction and through retail outlets.

Regional offices are maintained in Halifax, Montreal, Toronto, Edmonton and Vancouver. The Corporation is responsible to Parliament through the Minister of Supply and Services.

Defence Construction (1951) Limited. This is a Crown corporation, defined in Part VII of the Financial Administration Act and listed in Schedule "C" in the Act, which contracts for major construction and maintenance projects required by the Department of National Defence. It was incorporated May 10, 1951 under the authority of the Defence Production Act. In April 1965 control and supervision of the corporation was transferred from the Minister of Defence Production to the Minister of National Defence.

The Company's function is to obtain tenders, make recommendations regarding awards, to award and administer major construction and maintenance contracts which include supervision of construction work and the certification of contractors' progress claims for completed work.

The Company also provides technical and administrative assistance to other government departments and agencies when so required. Head office of DCL is in Ottawa and branch offices are located in Halifax, Montreal, Toronto, Winnipeg, Vancouver and Lahr, Federal Republic of Germany.

Defence Research Board. The Defence Research Board, established in 1947 by an amendment to the National Defence Act (RSC 1970, c.N-4), advises the Minister of National Defence on scientific matters relating to defence and evaluates the contribution of science and technology to the achievement of defence objectives. The functions of the Board were redefined on April 1, 1974 when its research and administrative activities and staff were absorbed within the framework of the Department of National Defence.

The Board consists of a full-time chairman, a vice-chairman and 12 members appointed by the Governor in Council for three-year terms. The Deputy Minister of National Defence, the President of the National Research Council and three senior officers of the Canadian Forces are ex-officio members. The Board has its headquarters in Ottawa.

Department of Agriculture. This Department was established in 1867 (SC 1868, c.53) and now operates under authority of RSC 1970, c.A-10. It undertakes work on all phases of agriculture. Research and experimentation are carried out by the Research, Health of Animals and Economics branches, and the Grain Research Laboratory; and the maintenance of standards and protection of products, by the Production and Marketing and Health of Animals branches. A new Food Systems Branch was created in 1972. The Canada Grain Act, as it pertains to the inspection, weighing, storage and transportation of grain, is administered by the Canadian Grain Commission, which is a part of the Department. Programs concerning farm income security and price stability are provided under the Crop Insurance Act, the Prairie Farm Assistance Act, the Canadian Dairy Commission Act, the Agricultural Stabilization Act and the Agricultural Products Board Act. The Agricultural Stabilization Board, the Agricultural Products Board, the Farm Credit Corporation, the Canadian Dairy Commission, the Canadian Livestock Feed Board and the National Farm Products Marketing Council report to Parliament through the Minister of Agriculture.

Department of Communications. The Department was established under Part II of the 1969 Government Organization Act and operates under authority of the Department of Communications Act (RSC 1970, c.C-24). The Minister of Communications is responsible for fostering the orderly operation and development of communications for Canada. This includes recommending national policies and programs regarding communications services for Canada, promoting the efficiency and growth of Canadian communications systems and assisting them to adjust to changing conditions and encouraging the development and introduction of new communication facilities and resources. Its responsibilities also include managing the radio frequency spectrum to permit the orderly use of radio communications, protecting Canadian interests in international telecommunications matters, and co-ordinating telecommunications services for departments and agencies of the Government of Canada.

Teleglobe Canada, the Canadian Radio-Television Commission and Telesat Canada report to Parliament through the Minister of Communications. The Canadian Transport Commission also reports through the Minister of Communications on matters pertaining to telecommunications.

Department of Consumer and Corporate Affairs. This Department was established in 1967 (RSC 1970, c.C-27) replacing the Department of the Registrar General of Canada. The duties, powers and functions of the Minister extend to and include all matters over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada, relating to: consumer affairs; corporations and corporate securities; combines, mergers, monopolies and restraint of trade; bankruptcies and insolvencies; and patents, copyrights, trade marks and industrial design.

The functions of the Department are divided into five main areas. The Bureau of Consumer Affairs co-ordinates government activities in the field of consumer affairs; the Bureau of Corporate Affairs administers the government's corporate activities; the Bureau of Intellectual Property administers laws and regulations pertaining to patents, trade marks, industrial designs and copyrights; and the Field Operations

Service supervises the Department's operations across Canada, staffing regional and district offices in five Canadian cities from coast to coast and district offices in 25 others. Competition policy is regulated by the Bureau of Competition Policy. In addition, as Registrar General of Canada, the Minister of Consumer and Corporate Affairs is the custodian of the Great Seal of Canada, the Privy Seal of the Governor General, the Seal of the Administrator of Canada and the Seal of the Registrar General of Canada. The Restrictive Trade Practices Commission (Combines Investigation Act) is domiciled in the Department and reports directly to the Minister.

Department of Energy, Mines and Resources. The Department of Energy, Mines and Resources was created in 1966 by the Government Organization Act (RSC 1970, c.E-6). The Department, in addition to its administrative services, is organized into three sectors. The Energy Development Sector has responsibilities relating to the development of plans and policies for all forms of energy, the development of programs, legislation and agreements to implement those policies, the direction of studies relating to energy sources and requirements, and the co-ordination of policy advice. A major responsibility of the Sector is research on and the formulation of a national energy policy. The Mineral Development Sector gathers economic data on non-renewable resources for use by government, industry and the public. It also develops policy proposals for the government and the Canadian mineral industry to help determine policies and decisions that will ensure an adequate, dependable and timely flow of minerals to meet the country's needs at reasonable cost. The Science and Technology Sector includes the Geological Survey of Canada, the Mines Branch, the Surveys and Mapping Branch, the Earth Physics Branch, the Canada Centre for Remote Sensing and the Polar Continental Shelf Project, all of which are engaged in research and the provision of information, and the Explosives Division, which controls, under the provisions of the Explosives Act, the production and handling of explosives.

Atomic Energy of Canada Limited, Eldorado Nuclear Limited, Eldorado Aviation Limited, the Atomic Energy Control Board, the National Energy Board, Uranium Canada Limited, Energy Supplies Allocation Board and the Interprovincial Boundary Commissions report to Parliament through the Minister of Energy, Mines and Resources. Operationally the International Boundary Commission reports through the Minister of Energy, Mines and Resources; in dealing with its counterpart in the United States it is responsible to the Secretary of State for External Affairs.

Department of the Environment. Established by Act of Parliament in June 1971 (SC 1970-71, c.42), this Department carries the main federal responsibility for leading the attack on pollution and ensuring the proper management and development of Canada's resources. The Department is organized into two principal components, each headed by a senior Assistant Deputy Minister.

The Fisheries and Marine Service has under its jurisdiction Fisheries Management and Ocean and Aquatic Affairs. Fisheries Management responsibilities include resource management and conservation, enforcement of fisheries regulations, industrial development and fish inspection, marketing and promotion, biological and technical research on fish and other aquatic flora and fauna, fishing vessel insurance and vessel construction subsidy administration, management of small craft harbours across Canada, promotion and management of recreational fisheries, and administration of international and federal-provincial fisheries agreements.

Ocean and Aquatic Affairs is responsible for the consolidated physical and chemical oceanographic research, biological research related to the quality of the marine environment, environmental assessments of activities affecting freshwater and marine life, marine geophysical mapping, operating of a fleet of research and survey vessels, hydrographic surveying, tide and water levels measurement and production of navigational, bathymetric and other charts of Canadian coastal and inland waters.

Environmental Services comprises the Atmospheric Environment Service, the Environmental Protection Service and the Environmental Management Service.

The Atmospheric Environment Service is responsible for acquiring and processing data and providing climatological and meteorological information. The Service maintains a national system to provide weather forecasts and current weather information to the general public, aviation and special users. This organization carries out research on air quality and environmental matters, and research to support the weather observing and forecasting system.

The Environmental Protection Service develops and enforces environmental protection regulations, standards, protocols and other protection and control instruments used to implement federal environment legislation. It also provides information for other federal departments administering legislation under which environmental regulations are to be developed. The Service develops national effluent and emission standards in consultation with the provinces and industry and is the public's point of contact with the Department on problems relating to the protection of the environment.

The Environmental Management Service, composed of four directorates — Inland Waters, Forestry, Wildlife and Lands — responsible for providing data on the quantity and quality of the resources, for research into the methodologies and techniques of conservation, and for planning the use of renewable resource utilization on a national basis.

A Planning and Finance Service provides policy and planning direction, co-ordinates the government's relationships respecting environmental and resources matters with the provinces and other countries, develops a comprehensive approach to departmental science policy and research activities, co-ordinates information services and supports the over-all departmental program by assisting in the acquisition and deployment of the human, physical and financial resources required to meet departmental objectives.

Advice to the Minister is provided by a Canadian Environmental Advisory Council and separate Fisheries and Forestry Advisory Councils. These advisory bodies review programs, assess impact and provide links with organizations outside government. The Councils include representatives from industry, the universities and the scientific community as well as the Department of the Environment.

Department of External Affairs. The main function of the Department of External Affairs, established in 1909 (RSC 1970, c.E-20), is the protection and advancement of Canadian interests abroad. The Minister responsible for the Department is the Secretary of State for External Affairs. The senior permanent officer (Deputy Minister) of the Department, the Under-Secretary of State for External Affairs, is assisted by a Deputy Under-Secretary and by four Assistant Under-Secretaries and is advised by officers in charge of bureaus, offices and divisions. The directors-general or directors of these units are each responsible for a part of the Department's work and are assisted by foreign service officers and specialists in various occupational groups, as well as by an administrative staff. Officers serving abroad are formally designated as High Commissioners, Ambassadors, Ministers, Counsellors, First Secretaries, Second Secretaries, Third Secretaries and Attachés at diplomatic posts and Consuls General, Consuls and Vice-Consuls at consular posts. Canada maintains approximately 180 diplomatic, consular and other missions, 60 of which are non-resident.

In Ottawa the work of the Department is conducted by four regional, seven functional and three administrative bureaus, in addition to a number of operational units performing staff or special functions. The four regional bureaus administer 12 geographical divisions, each of which is responsible for the countries that make up the region administered by the bureau to which it belongs: the European Affairs Bureau includes three divisions — Western Europe, Eastern Europe and Northwestern Europe including Britain; the Bureau of Asian and Pacific Affairs includes the East Asia, Pacific and South Asia Divisions; the Bureau of African and Middle Eastern Affairs, the African Affairs I (Anglophone), African Affairs II (Francophone) and Middle Eastern Divisions; and the Bureau of Western Hemisphere Affairs, the Caribbean (Commonwealth), Latin American and United States of America Divisions. The seven functional bureaus include 20 divisions: the Bureau of Economic and Scientific Affairs comprises the Aid and Development, Commercial Policy, Scientific Relations and Environmental Problems, and Transport, Communications and Energy Divisions; the Bureau of Legal Affairs includes the Legal Advisory and Legal Operations Divisions; the Bureau of Consular Affairs, the Consular Operations, and Consular Policy and Research Divisions; the Bureau of Defence and Arms Control Affairs, the Arms Control and Disarmament, and Defence Relations Divisions; the Bureau of Public Affairs, the Academic Relations Service, Cultural Affairs, Historical, Information and World Exhibitions Program Divisions; the Bureau of Coordination, the Commonwealth Institutions, Federal-Provincial Coordination and Francophone Institutions Divisions; and the Bureau of United Nations Affairs, the United Nations Economic and Social Affairs and United Nations Political and Institutional Affairs Divisions. The four administrative bureaus are responsible respectively for Personnel, Finance and Administration, Communications and General Services, and Security and Intelligence Liaison.

In addition, there is an Inspection Service, a Policy Analysis Group, a Protocol Division, an Operations Centre, a Central Staff, an Interdepartmental Committee on External Relations, a Co-ordinator of Information Systems Development, a Special Adviser on Foreign Service appointments and related policies, a Chief Air Negotiator, an Adviser on Bilingualism and a Special Adviser on Media Communications.

The International Joint Commission reports to the Secretary of State for External Affairs of Canada as well as to the Secretary of State of the United States. The Secretary of State for External Affairs reports to Parliament for the Canadian International Development Agency.

Department of Finance. Created by Act of Parliament in 1869, this Department now operates under the Financial Administration Act (RSC 1970, c.F-10 as amended). It is primarily responsible for advising the government on the economic and financial affairs of Canada. The work of the Department is carried out in five branches. The Tax Policy and Federal-Provincial Relations Branch helps to form tax policy and maintain the tax structure. It deals with personal income and commodity taxes, taxes on corporations and Canada's international tax relations. Fiscal relations with the provinces are the responsibility of a Federal-Provincial Relations Division. The Branch also administers grants to municipalities in lieu of new taxes on government property and advises on the government's social development and manpower policies. The Economic Programs and Government Finance Branch is concerned with resource development, various government programs of broad economic development and the financing of Crown corporations and

government agencies. The Tariffs, Trade and Aid Branch is concerned with trade policy and development, the Canadian aid program and customs' tariffs. The Economic Analysis, Fiscal Policy and International Finance Branch monitors the economy, analyzes the potential impact of various alternative courses for government fiscal policy and participates on Canada's behalf in a number of international organizations, including the International Monetary Fund. The Long Range Economic Planning Branch is responsible for co-ordinating, planning and developing medium- and long-term economic measures and policies. The Capital Markets Division is responsible for monitoring developments in capital markets and advising on the government's debt operations. The Inspector General of Banks is an office of the Department. In addition, the following agencies report to Parliament through the Minister of Finance: The Anti-dumping Tribunal, the Bank of Canada, the Canada Deposit Insurance Corporation, the Industrial Development Bank, the Department of Insurance and the Tariff Board. The Minister of Finance acts as spokesman in Parliament for the Auditor General.

Department of Indian Affairs and Northern Development. The Department of Indian Affairs and Northern Development was established in June 1966, superseding the Department of Northern Affairs and National Resources; it now operates under authority of RSC 1970, c.I-7. In 1968 the Department was reorganized, creating, in addition to departmental support services and an Engineering and Architectural Branch, three distinct program areas. The Indian and Eskimo Affairs Program includes education, community affairs, economic development for Indians and Inuit and Indian trust administration. The Northern Affairs Program covers the management of all natural resources north of the 60th parallel except game, the protection of the northern environment, government activities in the field of economic development and support of the territorial governments in providing social and other local services. Parks Canada is responsible for National Parks, National Historic Parks and Sites, historic waterways, wild rivers and byways.

The Commissioner of the Northwest Territories and the Commissioner of the Yukon Territory report to Parliament through the Minister of Indian Affairs and Northern Development. The Minister is also responsible to Parliament for the Northern Canada Power Commission, the National Battlefields Commission and the Historic Sites and Monuments Board of Canada.

Department of Industry, Trade and Commerce. In 1969, the Departments of Industry and of Trade and Commerce were merged to form the Department of Industry, Trade and Commerce (ITC), which operates under authority of RSC 1970, c.I-11. ITC promotes the establishment, growth and efficiency of manufacturing, processing and tourist industries in Canada and fosters the development of Canadian trade. The Department plans and carries out programs to assist manufacturing and processing industries in adapting to new technology and changing market conditions, in developing unrealized potential and in rationalizing productive facilities and corporate structures. It promotes product and process development, increased productivity, greater use of research, modern equipment, improved industrial design, the application of advanced technology and modern management techniques, and the development and application of sound industrial standards in Canada and in world trade.

In addition, the Department's functions include: improving access of Canadian goods and services into external markets through trade negotiations; contributing to the improvement of world trading conditions; providing support services for industrial and trade development, including information, import analysis and traffic services; analyzing the implications for Canadian industry, trade and commerce and for tourism of government policies related thereto in order to contribute to the formulation and review of those policies; and compiling and updating detailed information on trends and developments in Canada and abroad related to the manufacturing and processing and tourist industries.

The Department is organized into seven major functional groups: Office of Tourism, Industry Development, Industrial Policies, Export Development, International Trade Relations, Planning, Research and Evaluation, and Administration. The Office of Tourism includes the Travel Industry Branch and the Canadian Government Travel Bureau. The Industry Development component is made up of seven Industry Development Branches which cover the major industry groupings in Canada: Agriculture, Fisheries and Food Products; Textiles and Consumer Products; Chemicals; Electrical and Electronics; Machinery; Resource Industries and Construction; and Transportation Industries. The Industrial Policies segment includes the Office of Science and Technology, the Office of the Industrial Policy and the Office of Design and Productivity Analysis. The Export Development section comprises International Financing, Grains Marketing Office, Office of Transportation Policy and Office of Export Programs and Services. Reporting to the International Trade Relations sector is the Office of General Relations, the Office of Special Import Policy and the Export/Import Permits Division. Administration is responsible for Finance, Personnel, Office of Information and Public Relations, Program Planning and the Professional and Administrative Services Branch. In addition, the Department operates 10 regional offices across Canada and the Trade Commissioner Service which has 89 trade offices in 63 countries.

The Minister also reports to Parliament on behalf of Statistics Canada and the Export Development Corporation. Boards and other organizations reporting to the Minister are the General Adjustment Assistance Board, the Machinery and Equipment Advisory Board, the Pharmaceutical Industry

Development Advisory Committee, the National Design Council, the Standards Council of Canada, the Textile and Clothing Board, the Metric Commission and the Minister's Advisory Council.

Department of Insurance. The Minister of Finance is responsible for the Department of Insurance which originated in 1875 as a branch of the Department of Finance but was constituted a separate Department in 1910. It is authorized and governed by the Department of Insurance Act (RSC 1970, c.I-17). Under the Superintendent of Insurance, who is the Deputy Head, the Department administers the statutes of Canada applicable to federally incorporated insurance, trust, loan and investment companies; provincially incorporated insurance companies registered with the Department; British and foreign insurance companies operating in Canada; small loans companies and money-lenders; co-operative credit societies registered under the Co-operative Credit Associations Act; pension plans organized and administered for the benefit of persons employed in connection with certain federal works, undertakings and businesses; and life insurance issued to certain members of the Public Service prior to May 1954.

Under the relevant provincial statutes, the Department examines trust and loan companies incorporated in Nova Scotia, trust companies incorporated in New Brunswick and insurance and trust companies incorporated in Manitoba. It reports to Parliament through the Minister of Finance.

Department of Justice. This Department, established by SC 1868, c.39, now operates under authority of the Department of Justice Act (RSC 1970, c.J-2). The Minister of Justice is the official legal adviser of the Governor General and the legal member of the Queen's Privy Council for Canada. It is his duty to see that the administration of public affairs is in accordance with law, to superintend all matters connected with the administration of justice in Canada that are not within the jurisdiction of the provincial governments, to advise upon the legislation and proceedings of the provincial legislatures, and generally to advise the Crown on all matters of law referred to him by the Crown. The Minister of Justice is, ex officio, Her Majesty's Attorney General of Canada. In this capacity it is his duty to advise the heads of the departments of the Government of Canada on all matters of law connected with such departments, to settle and approve all instruments issued under the Great Seal of Canada, and to regulate and conduct all litigation for or against the Crown in the right of Canada. The Minister of Justice reports to Parliament for the Tax Review Board and the Law Reform Commission of Canada.

Department of Labour. The Department of Labour was established in 1900 by Act of Parliament (SC 1900, c.24) and now operates under the authority of the Department of Labour Act (RSC 1970, c.L-2). The Department administers, under the Minister of Labour, legislation dealing with: fair employment practices; hours of work, minimum wages, annual vacations, holidays with pay, equal wages, group and individual terminations of employment, severance pay and the regulation of fair wages and hours of labour in contracts made with the Government of Canada for construction, remodelling, repair or demolition of any work; government employee compensation, merchant seamen compensation, and employment safety; and transitional assistance benefits for auto workers and adjustment assistance benefits for textile workers and for footwear and tanning workers. It promotes joint consultation with industries through labour management committees and operates a women's bureau. The Department publishes the *Labour Gazette* and other publications as well as general information on labour management, employment, manpower and related subjects.

The Merchant Seamen Compensation Board reports to the Minister of Labour. The Department is the official liaison agency between the Canadian government and the International Labour Organization. The Canada Labour Relations Board and Information Canada report to Parliament through the Minister of Labour.

Department of Manpower and Immigration. The Department of Manpower and Immigration, created under the provisions of the Government Organization Act 1966 and operating now under RSC 1970, c.M-1, has responsibility for the development and utilization of manpower resources in Canada, employment services and immigration. The Department is composed of three operational arms: Operations Canada; the Manpower and Immigration Divisions; and two support service divisions, Program Development and Administration. Operations Canada directs the activities of 400 Canada Manpower Centres and 95 Immigration Centres in Canada assisted and co-ordinated by regional offices in Halifax, Montreal, Toronto, Winnipeg and Vancouver. The Canada Manpower Division is responsible for counselling programs, manpower training and mobility programs, employer services and services for disadvantaged workers and students. The Canada Immigration Division administers the Immigration Act and Regulations and is responsible for the selection, examination, enforcement and control, planning and priorities, movement and admission of immigrants to Canada, and for the exclusion or deportation of undesirable persons. The Department maintains 62 immigration offices abroad. The Department's support branches include the Strategic Planning and Research Division which supplies development and evaluation research, and the Administration Division which provides financial and management services, and personnel and information services.

The Canada Manpower and Immigration Council, the Immigration Appeal Board and the Unemployment Insurance Commission report to Parliament through the Minister of Manpower and Immigration.

Department of National Defence. The Department of National Defence and the Canadian Forces operate under the authority of the National Defence Act (RSC 1970, c.N-4). The Minister of National Defence is responsible for the control and management of the Canadian Forces, the Defence Research Board and all matters relating to national defence. He is also responsible for the construction and maintenance of all defence establishments and facilities required for the defence of Canada.

The Deputy Minister is the senior public servant in the Department and the principal civilian adviser to the Minister on all departmental affairs. He is responsible for ensuring that all policy direction from the government is reflected in the administration of the Department and in military plans and operations. The Chief of the Defence Staff is the senior military adviser to the Minister and is charged with the control and administration of the Canadian Forces. He is responsible for the effective conduct of military operations and the readiness of the Canadian Forces to meet the commitments assigned to them by the government.

A Defence Council, consisting of the Minister of National Defence as chairman, the Deputy Minister of National Defence, the Chief of Defence Staff, the Chairman Defence Research Board, the Vice Chief of the Defence Staff, the Assistant Deputy Minister (Policy), and the Deputy Chief of Defence Staff, meet as required to consider and advise on major policy matters. The Crown corporation Defence Construction (1951) Limited reports to Parliament through the Minister of National Defence.

Department of National Health and Welfare. This Department was established in October 1944 under the Department of National Health and Welfare Act (RSC 1970, c.N-9). An Administration Branch serves both the health and welfare branches. At present the Deputy Minister of Health administers five branches: Health Programs, Health Protection, Medical Services, Long Range Health Planning and Fitness and Amateur Sport. The Deputy Minister of Welfare administers seven branches: Income Security, International and Emergency Welfare, Social Allowances and Services, Canada Pension Plan, Policy Research and Long Range Planning, Policy and Program Development and Co-ordination, and Developmental Programs. The two Deputy Ministers are also involved in Canada's role in international health and welfare programs.

Departmental programs on health include hospital insurance and diagnostic services, medical care insurance, health resources, food and drug supervision, narcotics control, national health grants, federal emergency health services, environmental health, adverse drug reaction reporting, operation of a central clearing house for poison control centres, health, medical and hospital services to Indians and Inuit across Canada and all residents of the Yukon Territory and Northwest Territories, government employee health services and leprosy control as well as assistance and consultation services to the provinces on request.

Welfare programs include the Canada Pension Plan, old age security and guaranteed income supplements, family and youth allowances, the Canada Assistance Plan and emergency welfare services. There are also developmental programs, including national welfare grants, family planning grants and information and grants to groups of retired persons under the New Horizons Program.

The National Council of Welfare reports directly to the Minister who also reports to Parliament for the Medical Research Council.

Department of National Revenue. From Confederation until May 1918, customs and inland revenue Acts were administered by separate departments; after that date they were amalgamated under one Minister as the Department of Customs and Internal Revenue. In 1921 the name was changed to the Department of Customs and Excise. In April 1924 collection of income taxes was placed under the Minister of Customs and Excise and, under the Department of National Revenue Act, 1927, the Department became known as the Department of National Revenue. It operates now under the Income Tax Act, SC 1970-71-72, c.63, as amended.

The Customs and Excise component of the Department is responsible for the assessment and collection of customs and excise duties as well as of sales and excise taxes. The Taxation component is responsible for the assessment and collection of income taxes, Part I of the Canada Pension Plan, and collection of premiums and administration of the coverage provisions of the Unemployment Insurance Act through its 28 district taxation offices and the head office and Taxation Data Centre in Ottawa.

Department of Public Works was constituted in 1867 and operates under the legislative authority of the Public Works Act (RSC 1970, c.P-38). The Department acts as the agent of federal program departments and agencies in ensuring that they have the land, buildings and improvements to land required to carry out their responsibilities effectively, and acts as the agent of the government in seeking to ensure that the nearly \$20 billion that has been invested in federal real property brings the best return. The Department is divided into six administrative regions, with regional headquarters offices at Halifax, Montreal, Toronto, Ottawa, Edmonton and Vancouver. There are subsidiary offices located at other key points across Canada.

Departmental organization includes Realty, Program Planning and Development, Design, Finance and Management, Technological Research and Development Branches, Policy Research, Personnel Administration, Administrative Services, Program Management Evaluation, Public Relations and Information Services, and Customer Relations Divisions. The Dominion Fire Commissioner's office also operates under the authority of the Minister of Public Works.

Department of Regional Economic Expansion. This Department was established in 1969 (RSC 1970, c.R-4). Its function is to ensure that economic growth is dispersed widely enough across Canada to bring employment and earning opportunities in the slow-growth regions as close as possible to those in the other parts of the country, without interfering with a high over-all rate of national growth. The legislation authorizes the Department, in co-operation with provincial governments and other federal agencies, to prepare development plans and programs designed to meet the special needs of particular areas.

The Department has six major divisions, each under the control of an Assistant Deputy Minister: Planning and Co-ordination, Administration, and the Eastern, Quebec, Ontario and Western regional divisions. A major program provides development incentives to industry, in the form of cash grants, to encourage new productive employment in designated regions where such employment has been scarce. The Department is also responsible for programs under the Agricultural and Rural Development Act (ARDA); the Fund for Rural Economic Development (FRED); the Prairie Farm Rehabilitation Act (PFRA) which is concerned with land-use adjustment, water development projects and the establishment of tree shelterbelts; and the Special Areas Program.

Following a comprehensive policy review, the Department has developed a new approach of General Development Agreements to implement its programs. These are 10-year agreements, now signed with all provinces except Prince Edward Island (covered under FRED until 1984), which are buttressed by specific subsidiary agreements that identify joint actions to be initiated. Existing programs now are administered from regional offices at Moncton, Montreal, Toronto and Saskatoon.

The Minister of Regional Economic Expansion reports to Parliament for the Cape Breton Development Corporation. He is advised by the Atlantic Development Council on programs and policies for fostering economic development and social adjustment in the Atlantic region, and by the Canadian Council on Rural Development on rural development programming and policy nationally.

Department of the Secretary of State. The duties, powers and functions of the Secretary of State of Canada (RSC 1970, c.S-15) extend to and include all matters over which the Parliament of Canada has jurisdiction not by law assigned to any other department, branch or agency of the Government of Canada, relating to: citizenship; elections; State ceremonial, the conduct of State correspondence and the custody of State records and documents; the encouragement of the literary, visual and performing arts, learning and cultural activities; and libraries, archives, historical resources, museums, galleries, theatres, films and broadcasting.

The responsibilities of the Department of the Secretary of State include those pertaining to the administration of the following branches: Education Support, Research and Liaison; Language Programs; Arts and Culture, including State Protocol and Special Events; Translation Bureau; Citizenship Registration; Citizenship Programs, including multiculturalism, native citizens, women, citizenship participation, official language minority groups, human rights and travel and exchange.

The Secretary of State reports to Parliament for the Canadian Film Development Corporation, the National Arts Centre Corporation, the National Film Board, the National Library, the Public Archives, the National Museums of Canada, the Canada Council, the Canadian Broadcasting Corporation, the Company of Young Canadians and the Public Service Commission and acts as spokesman for the Office of the Representation Commissioner. In addition, the Secretary of State is responsible for the financial and administrative affairs of the Bilingual Districts Advisory Board.

Department of the Solicitor General. Before 1936, the Office of the Solicitor General was either a Cabinet post or a Ministerial post outside the Cabinet. From 1936 to 1945 the position did not exist, the duties of the Office being wholly absorbed by the Attorney General of Canada. The Solicitor General Act, 1945 re-established the Solicitor General as a Cabinet officer and provided that "the Solicitor General shall assist the Minister of Justice in the Counsel work of the Department of Justice, and shall be charged with such other duties as are at any time assigned to him by the Governor-in-Council". This legislation was repealed in 1966 when a new Department of the Solicitor General was created (RSC 1970, c.S-12); the Solicitor General of Canada became the Cabinet Minister with primary responsibility in the fields of correction and law enforcement. He is responsible for the Royal Canadian Mounted Police and the Canadian Penitentiary Service and also reports to Parliament for the National Parole Board, which is an independent agency.

Department of Supply and Services. The Department of Supply and Services was established on April 1, 1969 (RSC 1970, c.S-18) to furnish certain services previously provided by other departments, in line with the recommendations of the Royal Commission on Government Organization (Glassco Commission)

which had stressed the need for the federal government to foster efficiency and effect economies wherever possible. The Minister of Supply and Services is also the Receiver General for Canada and exercises all the duties, powers and functions assigned to that office by law.

The Department is organized into two major administrations, each headed by a Deputy Minister directly responsible to the Minister. The Supply Administration administers the Supply Programme, the objective of which is to acquire and provide, at minimum cost consonant with the attainment of national goals, goods and services required by federal government departments and agencies. It also maintains federal government equipment and provides printing facilities. Beginning with the 1973-74 fiscal year, the Supply Administration will recover the costs of services rendered from its customers. The Supply Administration has 18 regional or district supply offices across Canada. At various locations it provides purchasing and warehousing services and other services such as field contract administration, equipment maintenance, security, emergency supply planning, assets management and printing. The Overseas Region consists of two supply offices, one in London, England and the other in Koblenz, Federal Republic of Germany and one contract administration office in Washington, DC. The Supply Administration is organized into Commercial Supply Service, Science and Engineering Procurement Service and Corporate Management Service.

The Services Administration, acting for the Receiver General, provides payment or cheque-issuing services on behalf of all federal departments, maintains the fiscal accounts of Canada and prepares the public accounts. It offers departments and agencies a broad range of management and advisory services in management consulting, auditing and computer services fields. It also provides administrative services for all departments in connection with pay, pensions and other employee benefit plans, together with financial management reports and statistical information. Service functions are carried out through regional and district offices throughout Canada and abroad.

The Minister of Supply and Services reports to Parliament for the Canadian Commercial Corporation, Canadian Arsenals Limited, Crown Assets Disposal Corporation and the Royal Canadian Mint. The Minister also has the responsibilities of the Custodian under the Trading with the Enemy (Transitional Powers) Act, which consists of receiving, managing, releasing and disposing of properties seized from enemy interests during wartime.

Department of Veterans Affairs. This Department, established in 1944 (RSC 1970, c.V-1), is concerned exclusively with the welfare of veterans and with the dependents of veterans and of those who died during active service or as a result of disability attributable to war service. The Department is empowered to provide treatment services (hospital, medical, dental and prosthetic), welfare services, education assistance, life insurance, and land settlement and home construction assistance.

The Department has treatment institutions and facilities in six major urban centres and three veterans homes across Canada and it maintains administrative offices in the large cities and in London, England.

The Canadian Pension Commission, the War Veterans Allowance Board, the Bureau of Pensions Advocates, the Pension Review Board and the Army Benevolent Fund Board report to Parliament through the Minister of Veterans Affairs.

Director of Soldier Settlement and Director of the Veterans' Land Act. The Director of Soldier Settlement (SC 1919, c.71) is also the Director of the Veterans' Land Act (RSC 1970, c.V-4), and in each capacity is legally a corporation sole. For administrative purposes, however, the programs carried on under both Acts constitute integral parts of the services provided by the Department of Veterans Affairs.

Dominion Fire Commissioner. The Commissioner is responsible for directing fire protection and fire prevention programs throughout all the civil departments of the federal government. His office compiles civilian fire cause and loss statistics on a national basis; he presents the data in his annual report to the Minister of Public Works through whom he reports to Parliament.

Economic Council of Canada. This corporation, established under legislation passed on August 2, 1963 (RSC 1970, c.E-1), consists of a full-time chairman and two full-time directors appointed for a term not to exceed seven years, and not more than 25 additional members to serve part-time and without remuneration. The Council is to be as representative as possible of the private sector, labour, agriculture, primary industry, secondary industry, commerce and the general public. Its functions are to study and recommend measures that will achieve the highest possible levels of employment and efficient production so that Canada may achieve a high and consistent rate of economic growth and that all Canadians may share in rising living standards. The Council reports to Parliament through the Prime Minister and publishes various reports and studies.

Eldorado Aviation Limited. This company was incorporated April 23, 1953 to carry air traffic, both passenger and freight, for Eldorado Nuclear Limited and its wholly-owned subsidiary, Northern

Transportation Company Limited. It reports to Parliament through the Minister of Energy, Mines and Resources.

Eldorado Nuclear Limited. Set up in 1944 (RSC 1952, c.53) under the name of Eldorado Mining and Refining (1944) Limited (the date was omitted in June 1952 and the name changed in 1968), the Crown company's business is the mining and refining of uranium and the production of nuclear fuels in Canada. The company also acts as a custodian for Her Majesty of concentrates purchased under stockpiling contracts. It reports to Parliament through the Minister of Energy, Mines and Resources.

Energy Supplies Allocation Board. The Board was set up following approval by Parliament, January 11, 1974, of the Energy Supplies Emergency Act (SC 1973-74, c.52). The Board reports to the Minister of Energy, Mines and Resources and consists of a chairman and four members appointed by the Governor in Council supported by a staff appointed under the Public Service Employment Act. The Act setting up the Board expires on June 30, 1976. The Board's headquarters is in Ottawa.

The prime function of the Board is to maintain an overview of the supply of petroleum and petroleum products throughout the Canadian economy. Should an emergency arise, the Board recommends mandatory allocation and/or rationing orders for consideration by the Governor in Council. With approval it also administers these programs. Mandatory programs provided for under the legislation will give the Board wide authority to deal with specific situations. A secondary function of the Board is to administer the Oil Import Compensation Program and to monitor prices of petroleum products in the wholesale market.

Export Development Corporation. This Corporation operates under authority of the Export Development Act (RSC 1970, c.E-18, as amended). Its purpose is to facilitate the development of Canada's export trade by the provision of insurance export credits, guarantees, loans and other financial facilities to enable Canadian firms to meet international credit competition. It reports to Parliament through the Minister of Industry, Trade and Commerce. Its affairs are administered by a 12-man board of directors. The chairman and six other directors are appointed from among persons employed in the Public Service of Canada, the remaining five from private business. EDC's functions are: to insure Canadian exporters of goods and services against non-payment by foreign buyers due to credit or political events over which neither buyer nor seller has any control; to guarantee financial institutions against loss when they are involved in an export transaction by financing either the Canadian supplier or the foreign buyer; to make loans to foreign buyers in respect of the purchase of capital goods or major services from Canada when extended terms are necessary to meet international credit competition; and to insure Canadian investments abroad against non-commercial risks such as war or revolution, expropriation or confiscation, or the inability to repatriate capital or earnings.

Farm Credit Corporation. This Corporation which was established on October 5, 1959 (RSC 1970, c.F-2) is a Crown corporation responsible to Parliament through the Minister of Agriculture. Under the Farm Credit Act it makes long-term mortgage loans to assist farmers in developing viable farm businesses. It also administers the Farm Syndicate Credit Act and acts as an agent of the Canada Department of Agriculture in administering the Land Transfer Plan of the Small Farm Development Program.

Federal-Provincial Relations Office. For administrative purposes, the Federal-Provincial Relations Office is regarded as a department of government under the Prime Minister. The Office came into being on January 15, 1975 under legislation passed by Parliament in December 1974. For some years prior to the creation of the new Office, its functions had been the responsibility of a Division of the Privy Council Office. The Office is headed by the Secretary to Cabinet for Federal-Provincial Relations.

In general, the work of the Office consists of assisting the Prime Minister in his over-all responsibility for federal-provincial relations; assisting the Cabinet in examining federal-provincial issues of current and long-term concern, including co-ordination and support activities for the Cabinet Committee on Federal-Provincial Relations; assisting Ministers, departments, and agencies in the conduct of their relations with provincial governments; undertaking special studies as required; monitoring provincial views on federal policies and programs, and the evolution of provincial policies as they affect federal policies; and co-ordinating federal participation in Conferences of First Ministers.

To carry out its responsibilities the Office is divided into a Secretariat, a Policy and Program Review Section, and a Studies and Research Group.

Fisheries Prices Support Board. Under the Fisheries Prices Support Act (RSC 1970, c.F-23) the Board is responsible for investigating and, where appropriate, recommending action under the Act to support prices of fishery products where declines have occurred. The Board, subject to approval of the Governor in Council, is empowered to purchase fishery products at prescribed prices or to make deficiency payments to producers of fishery products equal to the difference between a prescribed price and the average price at

which such products were sold. The Board functions under the direction of the Minister of State (Fisheries).

Fisheries Research Board of Canada. The Board is a research body operating under an Act of Parliament (RSC 1970, c.F-24) to advise the Minister of State (Fisheries) on national fisheries and marine research and development policies, plans and programs. The majority of the Board's 18 members are senior scientists from universities and provincial agencies; the other members are senior executives from Canada's fisheries and marine industries.

The Food Prices Review Board was appointed by the Government of Canada on May 28, 1973, to publish quarterly economic analyses of food price movements; and to inquire into the causes of particular food price increases in any class of food products, and to issue reports thereon with all dispatch including recommendations where the Board considers it appropriate to make them. On August 21, 1973, the Board was also asked to inquire into any increases in the price of any food item where such increase may be unwarranted and, where the Board deems necessary, to publish a report thereon without delay. The Board consists of five members including a chairman, all appointed by the Governor in Council. It has two branch offices to answer consumer complaints, one in Vancouver and the other in Halifax. On October 13, 1975 the government announced that the Board would be replaced by the Anti-Inflation Board.

Foreign Claims Commission. By Order in Council PC 1970-2077 of December 8, 1970 the Canadian government established the Foreign Claims Commission to inquire into property claims made by Canadian citizens and the Government of Canada against foreign countries which may, from time to time, be referred to the Commission by the government. The reference is made after the government has negotiated a financial agreement with the foreign country. The Commissioners submit reports and recommendations regarding each claim to the Secretary of State for External Affairs and the Minister of Finance, stating whether, in the opinion of the Commissioners, each claimant is eligible to receive a payment under regulations promulgated from time to time by Order in Council. Up to December 31, 1974 claims against Hungary, Romania, Poland and Czechoslovakia had been referred to the Commission.

Freshwater Fish Marketing Corporation. This Corporation was established under the Freshwater Fish Marketing Act of 1969 (RSC 1970, c.F-13) and given the function of marketing and trading in fish, fish products and fish by-products in and out of Canada with the objectives of ensuring more orderly marketing for the benefit of the whole fishery and achieving higher and more stable prices for the catch. The Corporation received a grant for initial operating and establishment expenses but conducts its operations on a self-sustaining basis without parliamentary appropriations; it is financed by bank loans with government guarantee of repayment, or by direct loans. The Corporation consists of a board of directors composed of a chairman, a president, one director for each participating province and four other directors appointed by the Governor in Council for a term not exceeding five years. The Corporation reports to Parliament through the Minister of State (Fisheries).

General Adjustment Assistance Board. This Board administers the General Adjustment Assistance Program (GAAP), established in 1968 (SC 1967-68, c.34), as well as the Program for the Adjustment of the Footwear and Tanning Industries (PAFTI) established by Order in Council PC 1974-478. The programs help manufacturers improve their position in meeting international trade competition. Financial assistance is available in the form of insured loans and grants under the GAAP program and in the form of grants and direct loans under the PAFTI program. The Board is composed of members from both private industry and government; it reports to the Minister of Industry, Trade and Commerce.

Grains Group. In 1970 the Minister responsible for the Canadian Wheat Board (the Minister of Transport at present) organized the Special Advisory Group on Grains (Grains Group) to co-ordinate, review and recommend federal policies for grain production, transportation and handling, and marketing. The Minister responsible for the Canadian Wheat Board serves as the Chairman of the Grains Group. A Group Co-ordinator and three advisers for the areas of production, transportation and handling, and marketing are drawn from the federal departments of Agriculture; Industry, Trade and Commerce; and the Ministry of Transport. The offices of the Grains Group are in Ottawa.

Halifax Relief Commission. The Halifax Relief Commission was established (SC 1918, c.24) to carry on the work of the Halifax Relief Committee, formed by citizens following the explosion in Halifax on December 6, 1917. The Commission, in addition to conducting inquiries into the losses and damage which resulted from the explosion, is charged with the administration of relief funds. The Prime Minister is responsible for the Commission, but its financial arrangements are made through the Minister of Finance. The Commission will cease operations as of January 1, 1976.

Heritage Canada. Established under Part II of the Canada Corporations Act (RSC 1970, c.C-32), Heritage Canada is a national trust independent of government. It is concerned with the conservation of buildings, sites and natural and scenic areas of importance to the country's heritage. Its work is financed by memberships, contributions and the interest on an endowment fund to which the federal government granted \$12 million. Heritage Canada seeks to enlist the support of the general public, foundations and corporations; membership is open to anyone.

Historic Sites and Monuments Board of Canada. This Board was established in 1919 and now operates under authority of RSC 1970, c.H-6. The Historic Sites and Monuments Act provides for 15 members — two representatives each from Ontario and Quebec and one from each of the eight other provinces — appointed by the Governor in Council, together with the Dominion Archivist, one representative from the National Museums of Canada and one from the Department of Indian Affairs and Northern Development, as ex officio members. The members are generally historians of distinction, archaeologists or restoration architects. It is their function to advise the Minister of Indian Affairs and Northern Development on matters of national historic and architectural importance with particular reference to commemoration or preservation.

Immigration Appeal Board. The Immigration Appeal Board was established in 1967 by the Immigration Appeal Board Act (RSC 1970, c.I-3). The Board is a court of record with broad discretionary powers to permit the temporary or permanent admission of individuals, notwithstanding contrary provisions of the Immigration Act. The establishing Act provides for the operation of the Board and in particular for the legal and administrative processes involved in appeals by individuals against deportation, detention and the refusal of admission of sponsored relatives ordered under the provisions of the Immigration Act or Regulations. An appeal lies to the Federal Court of Canada and to the Supreme Court of Canada on leave.

The Board consists of nine permanent members and a number of temporary members. The Board sits at Ottawa, Montreal, Toronto, Vancouver and elsewhere as it sees fit.

Indian Claims Commission. This Commission, established by Order in Council PC 1969-2405, is responsible for studying Indian grievances and claims in consultation with Indian representatives and reporting on means for settlement. The one Commissioner reports to the Governor in Council through the Prime Minister.

Industrial Development Bank. The Bank, a subsidiary of the Bank of Canada, was incorporated in 1944 (RSC 1970, c.I-9) to supplement the activities of other lenders with particular consideration to the financing problems of small enterprises.

Information Canada. Information Canada began operations on April 1, 1970. On its formation the Department absorbed the Publishing Division of the Canadian Government Printing Bureau, the Canadian Government Exhibition Commission, and, in 1971, the Still Photo section of the National Film Board. The Department is composed of five main branches. At the end of 1975, the government announced that the agency would cease to exist at the end of March 1976.

Communications Branch is responsible for improving the government information process through counsel and advice to departments to help them develop or implement information programs; through the initiation of special projects which fill information gaps by increasing the citizen's knowledge of all federal programs and services; and through co-ordination of information projects involving several departments or agencies.

The Graphic Design Secretariat established in January 1974 is also a part of Communications Branch. The Secretariat is charged by Cabinet with upgrading the over-all quality and effectiveness of design in government. It is also responsible for co-ordinating the Federal Identity Program. The basis of this program is the consistent application of three graphic symbols for the identification of federal activities: the federal symbol, the full flag and the coat of arms.

Expositions Branch designs and presents exhibits and displays at home and abroad on behalf of all federal departments and agencies. The Branch has an Audio-visual Unit which prepares presentations for inclusion in exhibits, and also provides technical and creative counsel to other departments on request.

Regional Operations Branch is responsible for facilitating the exchange of public information on federal programs between the different regions of Canada and Ottawa. The Branch directs the operation of Information Canada's 11 inquiry centres and six book stores; maintains teams of mobile information officers; and helps develop information networks.

Publishing Branch promotes and sells government publications through Information Canada book stores, central and regional mail order and a network of private distribution outlets; provides publishing advice to departments on request; and distributes the publications of a number of international organizations such as the United Nations.

Research, Surveys and Evaluation Branch is responsible for all research and evaluation studies conducted within or on behalf of Information Canada. The Branch will also co-ordinate and plan research programs on behalf of other government departments and agencies, on request.

Information Canada reported to Parliament through the Minister of Labour.

International Boundary Commission. The Commission functions by virtue of the treaty of 1925 between Canada and the United States and the International Boundary Commission Act (RSC 1970, c.I-19). The International Boundary Commissioners, one for Canada and one for the United States, are empowered to inspect the boundary, to repair, relocate and rebuild monuments, to keep the boundary vistas open, to regulate all "work" within 10 ft of the boundary including structures of any kind or earthwork, to maintain at all times an effective boundary line and to determine the location of any point on the boundary necessary to settle any question that may arise between the two governments. Each country pays the salaries of its Commissioner and his assistants and the costs of maintaining the boundary are shared equally. The Canadian section of the Commission is within the Department of Energy, Mines and Resources for administrative purposes but the Canadian Commissioner reports functionally to the Secretary of State for External Affairs. The Commissioners meet at least once annually, alternately in Ottawa and Washington.

International Development Research Centre. Established as a public corporation by Act of Parliament (RSC 1970, c.21, 1st Supp.), the International Development Research Centre is an international organization supported financially by Canada. Its objectives are to initiate, encourage, support and conduct research into the problems of developing countries and into methods of applying and adapting scientific and technical knowledge to their socio-economic advancement. One of the Centre's chief purposes is to assist these countries to develop their own research skills and facilities.

The International Development Research Centre's board of governors consists of a chairman, a president and not more than 19 other members, nine of whom must be Canadian citizens. The Centre reports to Parliament through the Secretary of State for External Affairs.

International Fisheries Commissions. The Minister of State (Fisheries) reports to Parliament for the Canadian sections of the several international fisheries commissions of which Canada is a member.

International Joint Commission. This Commission was established under a Britain-United States treaty signed January 11, 1909 and ratified by Canada in 1911 (RSC 1970, c.I-20). The Commission, composed of six members (three appointed by the President of the United States and three by the Government of Canada), is governed by five specific Articles of the Boundary Waters Treaty of 1909. The Commission's approval is required for any use, obstruction or diversion of boundary waters affecting the natural level or flow of boundary waters in the other country; and for any works in waters flowing from boundary waters or below the boundary in rivers flowing across the boundary which raise the natural level of waters on the other side of the boundary.

Problems arising along the common frontier are also referred to the Commission by either country for examination and report, such report to contain appropriate conclusions and recommendations. In addition, questions or matters of difference between the two countries may be referred to the Commission for decision, provided both countries consent.

The Commission has been given responsibilities under the Canada-United States Great Lakes Water Quality Agreement of April 15, 1972 to assist in the implementation of the Agreement by co-ordinating the various programs referred to therein and monitoring their effectiveness. The Commission has established a Great Lakes Regional Office at Windsor, Ont. It is staffed by American and Canadian public servants and operating costs are shared equally by the two governments.

The Commission reports to the Secretary of State for External Affairs of Canada and to the Secretary of State of the United States.

Interprovincial Boundary Commission. The Manitoba-Saskatchewan Interprovincial Boundary Commission and the Alberta-British Columbia Boundary Commission each consisting of a Commissioner from the respective provinces and the Surveyor General of Canada are, at present, the only commissions concerned with boundaries between provinces. The latter has been established as a result of the enactment in 1974 of federal and provincial Alberta-British Columbia Boundary Acts to deal with resurveys of the sinuous boundaries, the settlement of problems or disputes, and the establishment, restoration and maintenance of survey monuments. However, there are also boundary commissions responsible for the borders between the following provinces and territories: Manitoba and the Northwest Territories; Saskatchewan and the Northwest Territories; Alberta and the Northwest Territories; and British Columbia, the Yukon Territory and the Northwest Territories. All report to Parliament through the Minister of Energy, Mines and Resources.

Law Reform Commission of Canada. The Law Reform Commission of Canada was established (RSC 1970, c.23, 1st Supp.) as a permanent body to study and keep the statutes and other laws of Canada under continuing and systematic review and in this way to complement the legislative and judicial processes. The work of the Commission is carried out with a view to making recommendations for their improvement, modernization and reform, including, without limiting the generality of the foregoing: the removal of anachronisms and anomalies in the law; the reflection in and by the law of the distinctive concepts and institutions of the common law and civil law legal systems in Canada, and the reconciliation of differences and discrepancies in the expression and application of the law arising out of differences in those concepts and institutions; the elimination of obsolete laws; and the development of new approaches to and new concepts of the law in keeping with and responsive to the changing needs of modern Canadian society and of individual members of that society. The Law Reform Commission reports to Parliament through the Minister of Justice.

Library of Parliament. The Library of Parliament as such was established in 1871 (SC 1871, c.21) although it existed earlier. It currently functions under RSC 1970, c.L-7. The Library of Parliament keeps all books, maps and other articles that are in the joint possession of the Senate and the House of Commons. The Parliamentary Librarian is also responsible for the Parliamentary Reading Room, the Confederation Building Branch Library and the Reading Room. Persons entitled to borrow books from the Library of Parliament are the Governor General, members of the Privy Council, members of the Senate and the House of Commons, officers of the two Houses, judges of the Supreme Court of Canada and the Federal Court of Canada, and members of the Press Gallery. The Library indexes Senate, House of Commons and Joint Committee Minutes of Proceedings and Reports and provides an extensive clipping service to Parliament. In addition, books are lent to other libraries and government agencies and reference service is given to scholars. A special research branch serves parliamentarians only. The Parliamentary Librarian has the rank of a Deputy Head of a department and is responsible for the control and management of the Library under the Speaker of the Senate and the Speaker of the House of Commons assisted by a joint committee appointed by the two Houses.

Machinery and Equipment Advisory Board. The Machinery and Equipment Advisory Board, established in 1968, is responsible for considering applications for remission of duty on machinery and equipment classifiable under Tariff Items 42700-1 and/or 41100-1 and for advising the Minister of Industry, Trade and Commerce as to the eligibility of such machinery for remissions according to the provisions of these two tariff items. The Board is composed of a chairman and the Deputy Ministers of Industry, Trade and Commerce, Finance and National Revenue. It is assisted by the branches of the Department of Industry, Trade and Commerce concerned with individual industries, including machinery manufacturing. The objective of the Machinery Program, which is administered by the Board, is to increase efficiency throughout Canadian industry by enabling machinery users to acquire advanced equipment at the lowest possible cost while at the same time affording Canadian machinery producers tariff protection on what they manufacture.

Medical Research Council. Established in 1969 and operating under authority of RSC 1970, c.M-9, the Council is a departmental Crown corporation of the federal government. It is composed of a president, a vice-president, and 20 members. The primary aim of the Council is the support and development of research in the health sciences in Canadian universities and affiliated institutions. It reports to Parliament through the Minister of National Health and Welfare.

Merchant Seamen Compensation Board. The Board is established by authority of the Merchant Seamen Compensation Act (RSC 1970, c.M-11, as amended) and reports to the Minister of Labour. The three members are appointed by the Governor in Council. The Board meets, as required, to adjudicate claims for compensation made by injured seamen employed on ships registered in Canada when they are not entitled to workmen's compensation under any provincial Workmen's Compensation Act or the Government Employees Compensation Act.

Metric Commission. The Commission was established by Order in Council PC 1971-1146, June 1971. It consists of a full-time chairman and up to 20 part-time commissioners, all of whom are appointed by the Governor in Council for a term of three years. An executive director acts for the Commission in directing the full-time staff.

The Commission advises the Minister of Industry, Trade and Commerce on plans for conversion to the metric system and may, for such purpose, prepare conversion plans and disseminate information. It includes 60 sector committees covering all areas of the Canadian economy. The staff plays a co-ordinating role for these sector committees, with the major impetus for conversion coming from the members who represent industry and commerce, associations, governments and other concerned bodies. Each sector committee develops a conversion plan for the industries involved; the sector plan is then approved by a steering committee. Both individual sector plans and over-all national guidelines are following a four-phase

framework — investigation, planning, scheduling and implementation — to ensure, as far as possible, that programs are phased and co-ordinated to maximize the benefits of conversion while minimizing the costs.

In the field of public education, activities include the distribution of pamphlets and brochures, the development of an extensive colour transparency library, the establishment of a Speakers' Bureau to provide speech material to interested organizations, exhibits for trade fairs and shows, and the production and distribution of documentary films and TV clips in both official languages. A mailing address for the general public (Box 4000, Ottawa, Ontario) has been established to handle an increasing number of requests for information on metric conversion in Canada.

Ministry of State for Science and Technology. This Ministry was established by Order in Council PC 1971-1695 on August 11, 1971, with the primary purpose of formulating and developing policies in relation to the activities of the Government of Canada that affect the development and application of science and technology. It is organized into three operational branches: Program Review and Assessment, Policy, and Co-operation. The Minister of State for Science and Technology is also designated as the Minister for the Science Council Act, the Cabinet member to whom the Science Council of Canada reports.

Ministry of State for Urban Affairs. The Ministry was created June 30, 1971 in accordance with the Government Organization Act 1970 (SC 1971, c.42). Its mandate is to develop, research, foster and co-ordinate urban policies and programs. The Ministry's task is to develop the most appropriate means by which the federal government may influence the evolution of the urbanization process in Canada, to integrate urban policy with other policies and programs of the federal government, to foster co-operative relationships in the area of urban affairs with the provinces and, through them, with their municipalities and with public and private organizations. Under the direction of the Secretary and two Assistant Secretaries, the Ministry is divided into two operating wings: Policy and Research, and Co-ordination and Development. There are also two service branches: Communications; and Personnel, Finance, and Administration.

Ministry of Transport. The role and structure of the former Department of Transport were changed and a Ministry was created February 17, 1970. The new Ministry is a corporate structure of Crown corporations, agencies and three operating administrations with varying degrees of autonomy, together with separate agencies for research, development and economic regulation. A Ministry headquarters staff supports the Minister and Deputy Minister in the functions of planning, policy formulation and assessment of program achievements in terms of the objectives of the Ministry.

The Canadian Marine Transportation Administration co-ordinates the functions of the St. Lawrence Seaway Authority, the National Harbours Board and the Marine Services components of the former Department of Transport. Its operations include management of the St. Lawrence Seaway through the St. Lawrence Seaway Authority and direct supervision of 13 harbours and other facilities through the National Harbours Board; 300 public harbours and 11 others are administered by commissions under the supervision of the Ministry. It is also responsible for aids to navigation, search and rescue, nautical and pilotage services, marine agencies, steamship inspection and the Canadian Coast Guard.

The Canadian Air Transportation Administration controls and operates Canada's airways and a number of federal airports and provides technical safety supervision of all aeronautical activities in Canadian air space. These activities are conducted through the branches of Civil Aeronautics and Construction Services, and the support branches of Corporate Planning, Finance and Personnel. The Canadian Air Transportation Administration also provides telecommunications, electronics and flight services to other components of the Ministry and to other departments and agencies.

The Canadian Surface Transportation Administration has planning, programming and co-ordinating responsibilities relating to federal participation in the development and, where appropriate, operation, of surface modes of transport. These include railways, highways, motor carriers, e.g. interprovincial trucking, ferry services, and urban transportation. The Administration maintains an interest in the emerging technology of surface transportation and its potential applications in Canada.

The Arctic Transportation Agency is responsible for developing and administering policy related to Ministry-supported transportation facilities and services in the Canadian north to further the government's national objectives there. Intermodal relationships between air, surface and marine transportation systems are a particular concern, as well as the compatibility of these systems with economic and technological growth in the North and with the needs of the residents. In this connection there is a special relationship between the Agency and the Department of Indian Affairs and Northern Development.

The Transportation Development Agency is responsible for initiating, promoting and co-ordinating transportation research and development activities, working closely with government agencies, industry and the academic community to provide a national focus for changing technology and development opportunities in the field of transportation.

The Ministry also includes Air Canada, Canadian National Railways, and Northern Transportation Company Limited. These three Crown corporations are autonomous, maintaining close consultation with the Minister to be consistent with the government's general policies in the field of transportation. The

Minister of Transport also reports to Parliament for the Canadian Transport Commission, the National Harbours Board and the St. Lawrence Seaway Authority.

National Advisory Council on Fitness and Amateur Sport. The Council was set up under the Fitness and Amateur Sport Act (RSC 1970, c.F-25) to consider problems connected with the objectives of the Act. The Fitness and Amateur Sport Branch of the Department of National Health and Welfare was inaugurated in 1961 to increase the number of participants at all levels of competitive and non-competitive physical recreation and amateur sport activity ranging from day camps to the Canada and Olympic Games. The Council, consisting of not more than 30 members appointed by the Governor in Council with at least one from each province, advises the Minister of National Health and Welfare on matters relating to the operation of the Act.

National Arts Centre Corporation. The Act establishing this Corporation (RSC 1970, c.N-2) was assented to July 15, 1966. The Corporation consists of a board of trustees composed of a chairman, a vice-chairman, the mayors of Ottawa and Hull, the Director of the Canada Council, the President of the Canadian Broadcasting Corporation, the Government Film Commissioner and nine other members appointed by the Governor in Council for terms not exceeding three years, except for the first appointees whose terms range from two to four years. The objects of the Corporation are to operate and maintain the National Arts Centre, to develop the performing arts in the National Capital Region and to assist the Canada Council in the development of the performing arts elsewhere in Canada. The Corporation reports to Parliament through the Secretary of State.

National Battlefields Commission. This Commission was established by Act of Parliament in 1908 (SC 1908, cc.57-58, as amended) to preserve the Historic Battlefields at Quebec City. Composed of nine members, seven appointed by the federal government and one each by Ontario and Quebec, the Commission is supported by the federal government through annual appropriations and is responsible to Parliament through the Minister of Indian Affairs and Northern Development.

National Capital Commission. This Commission, successor to the Federal District Commission, is a Crown agency created by the National Capital Act (RSC 1970, c.N-3), proclaimed February 6, 1959. Headed by a chairman, it is made up of 20 members, representing the 10 provinces of Canada and the National Capital Region.

The Commission is responsible for the acquisition, development and maintenance of public land in the National Capital Region; it co-operates with municipalities by providing planning aid or financial assistance in municipal projects of benefit to the region; and it advises the Department of Public Works on the siting and appearance of all federal government buildings in the 1,800-sq mile National Capital Region. The Commission reports to Parliament through the Minister of State for Urban Affairs.

National Council of Welfare. The National Council of Welfare is an advisory body consisting of 21 private citizens and encompassing a variety of welfare-related interests. Its members include past and present welfare recipients and low-income citizens active in welfare rights, public housing tenants' and other low-income citizens' groups, native people active in Indian and Métis organizations and trade unionists, social workers and others involved in social service associations, private welfare agencies and social work education. The Council advises the Minister of National Health and Welfare on matters related to welfare. The Office of the National Council of Welfare carries out research and other support activities for the Council and performs a liaison role between the federal department and organizations of the poor and related groups across Canada.

National Design Council. The National Design Council was established by Act of Parliament in 1961 (RSC 1970, c.N-5) to promote and expedite improvement of design in the products of Canadian industry. The Council makes recommendations on design policies and the planning of programs for the furtherance of design in Canada to be implemented through departments and agencies of the federal government, regional governments and other private and institutional bodies. Programs formally recognized by the Council are identified under the title of "Design Canada". The Council has 17 members appointed by the Governor in Council and reports through its chairman to the Minister of Industry, Trade and Commerce.

National Energy Board. This Board was established under the National Energy Board Act, 1959 (RSC 1970, c.N-6) for the purpose of assuring the best use of energy resources in Canada. The Board, composed of nine members, is responsible for regulating the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipelines, the export and import of gas and the import of motor gasoline and motor gasoline-blending components, the export of electric power, and the construction of the lines over which power is exported or

imported, the export of crude oil, motor gasoline, middle distillates (diesel fuel, kerosene and heating oil), propane, butanes and heavy fuel oil.

The Board is also required to study and keep under review all matters relating to energy under the jurisdiction of the Parliament of Canada and to recommend such measures as it considers necessary and advisable on the subject. It reports to Parliament through the Minister of Energy, Mines and Resources.

National Farm Products Marketing Council. This Council was established in 1972 under the National Farm Products Marketing Agencies Act (SC 1972, c.65). The Council consults with producers, commodity boards, and provincial and federal governments and co-ordinates their views on the establishment and operation of national marketing agencies. It assists and supervises the operations of agencies and promotes more effective marketing of farm products in interprovincial and export trade. The goal is to maintain and promote an efficient, competitive and expanding agricultural industry.

The Council consists of a chairman, a vice-chairman, two full-time and two part-time members, appointed by the Governor in Council and is directly responsible to the Minister of Agriculture. Council headquarters is in Ottawa.

National Film Board. The National Film Board, established in 1939, operates under the National Film Act (RSC 1970, c.N-7) which provides for a board of governors of nine members — a Government Film Commissioner, appointed by the Governor in Council, who is chairman of the Board, three members from the Public Service of Canada and five members from outside the Public Service. The Board reports to Parliament through the Secretary of State. It is responsible for advising the Governor in Council on film activities and is authorized to produce and distribute films in the national interest and, in particular, films “designed to interpret Canada to Canadians and to other nations”. The Board is responsible for the production and processing of films for government departments. Its head office is in Ottawa and its operational headquarters in Montreal.

National Harbours Board. The Board was established by Act of Parliament in 1936 (RSC 1970, c.N-8). It is responsible for the administration of port facilities at the harbours of St. John's, Nfld.; Halifax, NS; Saint John and Belledune, NB; Sept Îles, Chicoutimi, Baie-des-Ha! Ha!, Quebec, Trois-Rivières and Montreal, Que.; Churchill, Man.; Vancouver and Prince Rupert, BC; the Jacques Cartier and Champlain bridges at Montreal, Que.; and the grain elevators at Prescott and Port Colborne, Ont. The Board reports to Parliament through the Minister of Transport.

National Library. The National Library came formally into existence on January 1, 1953, with the proclamation of the National Library Act (RSC 1970, c.N-11). It publishes *Canadiana*, a monthly catalogue of new publications relating to Canada, with an annual cumulation. The Library also publishes other bibliographies. Its Reference Branch maintains the Canadian Union Catalogue which embodies the author catalogues of the major libraries in the 10 provinces and is thus a key to the book collections of the whole country. The Library's own bookstock totals more than 500,000 volumes. The National Librarian reports to Parliament through the Secretary of State.

National Museums of Canada. The National Museums of Canada is a departmental Crown corporation established April 1, 1968, by the National Museums Act (RSC 1970, c.N-12). The corporation was established to join under one administration the four existing museum activities: the National Gallery of Canada; the National Museum of Man (including the Canadian War Museum); the National Museum of Natural Sciences; and the National Museum of Science and Technology (including the National Aeronautical Collection). The corporation reports to Parliament through the Secretary of State.

The board of trustees is composed of a chairman, a vice-chairman, an executive committee of five, and seven additional board members. All these members of the board are appointed by the Governor in Council for fixed terms of office. In addition there are two ex officio members, the Director of the Canada Council and the President of the National Research Council.

The purposes of the corporation, according to the Act, are “to demonstrate the products of nature and the works of man, with special but not exclusive reference to Canada, so as to promote interest therein through Canada and to disseminate knowledge thereof”. The corporation is empowered to collect, classify, preserve and display objects; undertake or sponsor research; arrange for and sponsor travelling exhibitions of materials in, or related to, its collections and to arrange for the publication or acquisition and the sale to the public of books, pamphlets, replicas and other relevant materials; undertake or sponsor programs for the training of persons in the professions and skills involved in the operation of museums; arrange for or provide professional and technical services to other organizations whose purposes are similar to any of those of the corporation on such terms and conditions as may be approved by the Minister; and generally to do and authorize such things as are incidental or conducive to the attainment of the purposes of the corporation and the exercise of its powers.

National Parole Board. The National Parole Board was established in 1959 by the Parole Act (RSC 1970, c.P-2), which gives it absolute authority for parole of inmates under sentence of imprisonment imposed under an Act of Parliament or for criminal contempt of court. Under the Act the Board has jurisdiction over all matters of federal parole except sentences for murder. In such cases eligibility is possible after a stipulated time between 10 and 20 years has been served; consent for release on parole must come from the Governor in Council. The Board is composed of a chairman and 18 other members appointed by Order in Council. The Board reports to Parliament through the Solicitor General of Canada.

National Research Council of Canada. This is an agency of the federal government established in 1916 to promote scientific and industrial research. The Council operates science and engineering laboratories in Ottawa, Halifax and Saskatoon; gives direct financial support to research carried out in Canadian university and industrial laboratories; sponsors associate committees co-ordinating research on specific problems of national interest; and develops and maintains the nation's primary physical standards. The federal government has designated NRC as the co-ordinating body for the further development of a national scientific and technical information system under the general direction of the National Librarian. Other activities include the provision of free technical information to manufacturing concerns; the publication of research journals; and representation of Canada in International Scientific Unions. Patentable inventions developed in the Council's laboratories are made available for manufacture through a subsidiary company, Canadian Patents and Development Limited. The National Research Council consists of a president, three vice-presidents and 17 members representing Canadian universities, industry and labour. The Council is incorporated under the National Research Council Act (RSC 1970, c.N-14) and reports to Parliament through a designated Minister, at present the President of the Treasury Board.

New Brunswick Multiplex Corporation. This Corporation was established under the terms of a formal agreement between the federal and provincial governments on February 2, 1971. The object of the Corporation is to develop preliminary plans for the creation of a metal-working industrial complex centred in Saint John, NB.

Northern Canada Power Commission. The Commission was established by Act of Parliament in 1948 (RSC 1970, c.N-21) to provide power to points in the Northwest Territories where a need developed and where power could be supplied on a self-sustaining basis; the Act was amended in 1950 to give the Commission authority to provide similar services in the Yukon Territory. The name of the Commission (formerly the Northwest Territories Power Commission) was changed in 1956. It is composed of a chairman and four members appointed by the Governor in Council. Of the additional members, one each is appointed on the recommendation of the Commissioners of the Northwest Territories and the Yukon Territory.

Northern Transportation Company Limited. This Company was incorporated in 1947 under the title of Northern Transportation Company (1947) Limited, the date being omitted from the name in 1952. Previously a company chartered under an Alberta statute, it has been a wholly-owned subsidiary of Eldorado Nuclear Limited since that Crown company was established. It carries out the business of a common carrier in the Mackenzie River watershed, the western Arctic and Hudson Bay, and operates a wholly-owned subsidiary trucking company with operations in Alberta and the Northwest Territories. The Company is responsible to Parliament through the Minister of Transport.

Office of the Auditor General. This Office originated in 1878 and currently functions under the Financial Administration Act (RSC 1970, c.F-10). The Auditor General is responsible for examining accounts relating to the Consolidated Revenue Fund and to public property, and for reporting annually to the House of Commons the results of his examinations. He also audits the accounts of various Crown corporations and other organizations. The Minister of Finance acts as spokesman in Parliament for the Auditor General.

Office of the Chief Electoral Officer. This Office was established in 1920 under the provisions of the Dominion Elections Act, now the Canada Elections Act (RSC 1970, c.14, 1st Supp.), and is responsible for the conduct of all federal elections as well as the elections of members of the Northwest Territories Council and of the Yukon Territory Council. In addition, it conducts any vote taken under the Canada Temperance Act. The Chief Electoral Officer is responsible directly to the House of Commons, the President of the Privy Council acting as spokesman for him in the Cabinet.

Office of the Representation Commissioner. The Office was established in 1963 under the provisions of the Representation Commissioner Act (RSC 1970, c.R-6). After each decennial census, the Representation Commissioner is responsible for preparing maps showing the distribution of population in each province and setting out alternative proposals respecting the boundaries of electoral districts in each province. These maps are supplied to the 11 electoral boundaries commissions (one for each province and one for the

Northwest Territories) established under the provisions of the Electoral Boundaries Readjustment Act (RSC 1970, c.E-2). The Representation Commissioner is a member of each of the commissions. The Secretary of State acts as spokesman for the Office in the Cabinet and the House of Commons.

Panarctic Oils Ltd. This corporation is a consortium of oil and gas companies, individuals and the federal government formed in 1967 to explore for oil and gas in the Arctic area. Panarctic Oils Ltd. is not a Crown corporation and does not report to Parliament.

Pension Appeals Board. This Board, established under the Canada Pension Plan Act (RSC 1970, c.C-5) hears appeals under the Canada Pension Plan and under certain provincial pension plans. It also hears appeals from certain decisions of the Umpire under the Unemployment Insurance Act (SC 1971, c.48). The Board consists of two judges of the Federal Court of Canada or of a superior court of a province appointed as chairman and vice-chairman, and not less than one and not more than eight other persons, each of whom must be a judge of the Federal Court or of a superior, district or county court of a province. For purposes of appeals under the Canada Pension Plan, the Board reports to Parliament through the Minister of National Health and Welfare.

Pension Review Board. The Pension Review Board was created under the Minister of Veterans Affairs by the amendments to the Pension Act 1971 (SC 1970-71, c.31). Composed of a chairman and four other members, the Board is an independent and autonomous body that hears appeals in the National Capital Region from pension applicants dissatisfied with decisions of an Entitlement Board or two members of the Canadian Pension Commission. The Board is also the responsible body when matters of interpretation of the Acts are at issue.

Pilotage Authorities. The Pilotage Act (SC 1971, c.52) established the Atlantic Pilotage Authority, the Laurentian Pilotage Authority, the Great Lakes Pilotage Authority and the Pacific Pilotage Authority as proprietary corporations as specified in Schedule D of the Financial Administration Act. The objects of each Authority are to establish, operate, maintain and administer in the interests of safety an efficient pilotage service within the region set out in respect of the Authority. Each of the four Authorities has a chairman and not more than six other members appointed by the Governor in Council for a term not exceeding 10 years. The Pilotage Authorities report to Parliament through the Minister of Transport.

Post Office Department. Administration and operation of the Canada Post Office, by virtue of the Post Office Act (RSC 1970, c.P-14) and under the Postmaster General, includes all phases of postal activity, personnel, mail handling, transportation of mails by land, water, rail and air and the direction and control of financial services including the operation of the money order service.

The Department's headquarters is located in Ottawa, with regional headquarters in Halifax, Montreal, Toronto and Vancouver. District offices are located in St. John's, Halifax, Saint John, Quebec City, Montreal, Ottawa, North Bay, Toronto, London, Winnipeg, Saskatoon, Edmonton and Vancouver.

Prairie Farm Rehabilitation Administration (PFRA). The PFRA was established in 1935 (RSC 1952, c.214) to assist in the rehabilitation of agricultural lands seriously affected by drought and soil drifting in Manitoba, Saskatchewan and Alberta. Since then it has turned 2.5 million acres of marginal and submarginal land into community pastures and has been instrumental in the construction of many large irrigation and water-control projects. At the farm level, the PFRA has assisted 100,000 dugout projects for irrigation, stock-watering and domestic water supplies. It has also distributed up to 10 million seedlings a year for farm shelterbelts.

Privy Council Office. For administrative purposes, the Privy Council Office is regarded as a department of government for which the Prime Minister has responsibility as set forth in PC 1962-240. The Clerk of the Privy Council, under whose direction its functions are carried out, is considered as a Deputy Head and takes precedence among the chief officers of the Public Service. The authority of the Privy Council Office is to be found in Sections 11 and 130 of the British North America Act, 1867, which constituted a Council to aid and advise in the Government of Canada to be styled the Queen's Privy Council for Canada. In 1940, with the wartime development of Cabinet committees and the consequent need for orderly secretarial procedures such as agenda, explanatory memoranda and minutes, the Clerk of the Privy Council was designated Secretary to the Cabinet, and the Cabinet Secretariat was brought into being in the Privy Council Office. Since 1946, the Privy Council Office has been further reorganized, developed and enlarged and certain administrative functions of the Privy Council Office and the Prime Minister's Office have been closely integrated in the interests of efficiency and economy.

The organization of the Privy Council Office at present consists primarily of the Cabinet Secretariat with two divisions reporting to the Clerk of the Privy Council and Secretary to the Cabinet: Deputy Secretary to the Cabinet (Operations); and Deputy Secretary to the Cabinet (Plans). Each division contains

a number of Secretariats that support the Cabinet and its committees. The Secretariats prepare and circulate agenda and necessary documents to Ministers, and record and circulate decisions. They communicate with departments and agencies of the government, and provide advisory support for the Prime Minister as required. Other sections within the PCO advise the Prime Minister on senior appointments, constitutional matters, emergency and long-range planning, and the exercise of his prerogative to allocate responsibilities between Ministers. Within the Privy Council Office, submissions to the Governor in Council are received, draft orders and regulations prepared, approved Orders are circulated and, in addition, the duties of editing, registering and publishing the federal statutory regulations in Part II of the *Canada Gazette* are carried out.

Public Archives. The Public Archives was founded in 1872 and is administered under the Public Archives Act (RSC 1970, c.P-27) by the Dominion Archivist who has the rank of a Deputy Minister and reports to Parliament through the Secretary of State. Its purpose is to assemble and make available to the public a comprehensive collection of source material relating to the history of Canada. It also has broad responsibilities in regard to the promotion of efficiency and economy in the management of the federal government records. The Historical Branch, located in the National Library and Archives Building, is a centre for research on the development of Canada. In addition to the selected records of the federal government, it possesses an extensive collection of private papers of individuals and societies, a map collection which is the most important of its kind in the country, and an extensive collection of paintings, drawings, prints, photographs, sound recordings and films relating to Canada. A specialized library is also at the disposal of searchers. The Records Management Branch operates a large Records Centre in Ottawa and regional centres in Toronto, Montreal, Vancouver, Winnipeg and Halifax where non-current departmental records are centralized, stored and serviced. It assists departments in their records management programs. The Administration and Technical Services Branch operates the Central Microfilm Unit for the several departments of government.

Under the terms of the Laurier House Act (RSC 1952, c.163), the Public Archives is responsible for the administration of Laurier House as a museum.

Public Service Commission. Arrangements were made for civil service appointments under the first Civil Service Act of 1868 but the first Civil Service Commission was not created until 1908. This established the beginnings of the merit system which is today the cornerstone of personnel administration in the Public Service. The Act of 1918 gave the Commission authority to control recruitment, selection, appointment, classification and organization and to recommend rates of pay. The next Civil Service Act, passed in 1961, strengthened the principles of the merit system, clarified the Commission's role in other areas of personnel administration, and gave the staff associations the right to be consulted on matters about remuneration and conditions of employment.

The Public Service Employment Act (RSC 1970, c.P-32) which came into force on March 13, 1967, redefined the Commission's role as the central staffing agency and extended its authority to the Public Service, covering certain groups of employees exempt from the previous Acts. The Public Service is specified in Schedule A of the Public Service Staff Relations Act. It does not include Crown corporations, such as the Canadian Broadcasting Corporation, the Central Mortgage and Housing Corporation, the Canadian National Railways and Air Canada. The new Act also reaffirms the merit principle, at the same time permitting delegation of the Commission's authority, although not its responsibility to Parliament. Under the Act, the Commission is relieved of responsibility for recommending rates of pay and conditions of service to the government, for classification, and for consultation with staff associations on matters that are now the subject of collective bargaining.

On November 9, 1972, the Commission was assigned the duty, by Order in Council PC 1972-2569, of investigating cases of alleged discrimination on grounds of sex, race, national origin, colour or religion with respect to the application and operation of the Public Service Employment Act, and the Anti-Discrimination Branch has been established for this purpose.

The Public Service Commission reports directly to Parliament. The Secretary of State has traditionally been the Minister who presents the Commission's report to the House of Commons, and answers questions in the House of Commons on the Commission's behalf.

Public Service Staff Relations Board. Established in 1967 by the Public Service Staff Relations Act (RSC 1970, c.P-35, as amended by SC 1972, c.18 and SC 1973-74, c.15), the Board is an independent body responsible for determining bargaining units, certifying bargaining agents, dealing with complaints of unfair practices and generally overseeing the administration of the legislation providing for collective bargaining in the Public Service of Canada. The Board is also responsible for providing information on rates of pay and other conditions of employment in Canada to the parties to bargaining in the Public Service. This latter responsibility is met through its Pay Research Bureau. The Board consists of a full-time chairman, vice-chairman and not more than three deputy chairmen who hold office for a period of 10 years and up to eight part-time members, equally representative of the interests of employees and the interests of the employers,

who hold office for seven years. Under the Act the Public Service Staff Relations Board reports to Parliament, through such Minister of the Crown, other than a member of the Treasury Board, as may be designated by the Governor in Council. As at December 31, 1974 the responsible Minister was the President of the Privy Council.

Queen Elizabeth II Canadian Research Fund. The Queen Elizabeth II Canadian Research Fund Act (SC 1959, c.33) established the Fund of \$1 million to be administered by a board of trustees to aid in research on the diseases of children. The Prime Minister reports to Parliament on the operations of the Fund.

Restrictive Trade Practices Commission. The Restrictive Trade Practices Commission is responsible under the Combines Investigation Act (RSC 1970, c.C-23) for appraising evidence submitted to it by the Director of Investigation and Research and the parties under investigation, holding hearings and making reports to the Minister of Consumer and Corporate Affairs.

Roosevelt Campobello International Park Commission. Established by the Roosevelt Campobello International Park Commission Act (SC 1964-65, c.19), the Commission consists of six members, three appointed by the Government of Canada and three by the Government of the United States, to administer the Roosevelt Campobello International Park at Campobello, NB. The Canadian section of the Commission reports to Parliament through the Secretary of State for External Affairs.

Royal Canadian Mint. The Royal Canadian Mint has been in operation since 1908. It was first established as a branch of the Royal Mint under the (Imperial) Coinage Act of 1870, and opened on January 2, 1908. On December 1, 1931, it became the Royal Canadian Mint and operated as a branch of the Department of Finance. In 1969, the Mint became a Crown agency corporation, reporting to Parliament through the Minister of Supply and Services. It operates under authority of RSC 1970, c.R-8.

The latter change was made to provide for a more industrial type of organization and for flexibility in producing coins of Canada and other countries; buying, selling, melting, assaying and refining gold and other precious metals; and producing metals, plaques and other devices. The Mint has a seven-man board of directors appointed by the Governor in Council — the Master of the Mint who is its chief executive officer appointed to serve during pleasure, the chairman who is appointed for a four-year period, subject to re-appointment, and five other directors, two from inside and three from outside the Public Service, who are appointed for terms of three years. The Mint now operates basically as a manufacturing enterprise, with the object of making a small profit. Financial requirements are provided through loans from the Consolidated Revenue Fund.

Royal Canadian Mounted Police. The Royal Canadian Mounted Police, a civil force organized and administered by the federal government, was established in 1873 as the North-West Mounted Police. It now operates under authority of the Royal Canadian Mounted Police Act (RSC 1970, c.R-9) and is responsible for enforcing federal laws throughout Canada. By agreement with the governments of eight provinces (all provinces except Ontario and Quebec) it is also responsible for enforcing the Criminal Code of Canada and provincial laws within those provinces under the direction of the respective Attorneys General. In these provinces the Force provides police services to 166 municipalities, assuming enforcement responsibilities for criminal, provincial and municipal laws. The Yukon Territory and Northwest Territories are policed exclusively by the Royal Canadian Mounted Police. A Commissioner, appointed by the Governor in Council, has control and management of the Force and of all matters connected therewith, under the direction of the Solicitor General of Canada.

St. Lawrence Seaway Authority. The St. Lawrence Seaway Authority was established by Act of Parliament in 1951 (RSC 1970, c.S-1) and came into force by proclamation on July 1, 1954. The Authority was incorporated for the purposes of constructing, maintaining and operating all such works as may be necessary to provide and maintain, either wholly in Canada or in conjunction with works undertaken by an appropriate authority in the United States, a deep waterway between the Port of Montreal and Lake Erie. The Crown corporation, Seaway International Bridge Corporation Limited, is subsidiary to the St. Lawrence Seaway Authority. The Authority is composed of a president, a vice-president and a member, and reports to Parliament through the Minister of Transport.

Science Council of Canada. The Science Council of Canada was established in 1966 (RSC 1970, c.S-5) and became a Crown corporation on April 1, 1969. The Council consists of 25 members, each having a specialized interest in science or technology, and four associate members chosen from among officers or employees of the federal government. Members hold office for terms of not more than three years and associate members hold office during pleasure. All are appointed by the Governor in Council. The duties of the Science Council are to assess in a comprehensive manner Canada's scientific and technological

resources, requirements and potentialities and to make recommendations thereon. The Council reports to Parliament through a designated Minister, at present the Minister of State for Science and Technology.

Seaway International Bridge Corporation Limited. The Seaway International Bridge Corporation Limited was established under the Companies Act, by Letters Patent, November 13, 1962. It operates the international toll bridge system between Cornwall, Ont. and Roosevelttown, NY on behalf of the owners, the St. Lawrence Seaway Authority and the Saint Lawrence Seaway Development Corporation. It reports to Parliament through the Minister of Transport.

Standards Council of Canada. The Council was established by Act of Parliament (RSC 1970, c.41, 1st Supp.) which received Royal Assent on October 7, 1970. Its objectives are to foster and promote voluntary standardization in fields relating to the construction, manufacture, production, quality, performance and safety of buildings, structures, manufactured articles and products and other goods, including components thereof, not expressly provided for by law, as a means of advancing the national economy, benefiting the health, safety and welfare of the public, assisting and protecting consumers, facilitating domestic and international trade and furthering international co-operation in the field of standards. The Council is responsible for co-ordinating the planning and execution of a program for the development of standards in the metric (SI) system. This activity is in support of the over-all program which is being developed by the Preparatory Commission for Metric Conversion.

The Council consists of not more than 57 members; including six federal representatives, 10 representing the provinces and 41 other members. Membership is broadly representative of all levels of government, primary and secondary industries, distributive and service industries, trade associations, labour unions, consumer associations and the academic community. The Council reports to Parliament through the Minister of Industry, Trade and Commerce.

Statistics Canada. Statistics Canada became the new name for the Dominion Bureau of Statistics with the proclamation of a new Statistics Act (SC 1971, c.15) on May 1, 1971. The bureau was initially set up by statute in 1918 as the central statistical agency for Canada (SC 1918, c.43). In 1948 this statute, which had been consolidated as the Statistics Act (RSC 1927, c.190), was repealed and replaced by the Statistics Act (RSC 1952, c.257) which was amended by SC 1952-53, c.18, assented to March 31, 1953. The 1971 Act replaced that statute.

The functions of Statistics Canada are to compile, analyze and publish statistical information relative to the commercial, industrial, financial, social and general condition of the people and to conduct regularly a census of population and agriculture of Canada as required under the Act.

Statistics Canada is a major publication agency of the federal government; its reports cover all aspects of the national economy and social conditions of the country. The administrative head of the bureau is the Chief Statistician of Canada who has the rank of a Deputy Head of a department and reports to Parliament through the Minister of Industry, Trade and Commerce.

Tariff Board. Constituted in 1931, the Board derives its duties and powers from four statutes: the Tariff Board Act (RSC 1970, c.T-1); the Customs Act (RSC 1970, c.C-40); the Excise Tax Act (RSC 1970, c.E-13); and the Anti-dumping Act (RSC 1970, c.A-15).

Under the Tariff Board Act, the Board makes inquiry into and reports on any matter in relation to goods that, if brought into Canada, are subject to or exempt from customs duties or excise taxes. Reports of the Board are tabled in Parliament by the Minister of Finance. It is also the duty of the Board to inquire into any other matter in relation to the trade and commerce of Canada that the Governor in Council sees fit to refer to the Board.

Under the provisions of the Customs Act, the Excise Tax Act and the Anti-dumping Act, the Tariff Board acts as a court to hear appeals from decisions of the Department of National Revenue, Customs and Excise, in respect of excise taxes, tariff classification, value for duty, drawback of customs duties and determination of normal value or export price in dumping matters. Declarations of the Board on appeals are final and conclusive but the Acts contain provisions for appeal on questions of law to the Federal Court and thence to the Supreme Court of Canada.

Tax Review Board. The Tax Review Board, created in 1949 as the Income Tax Appeal Board and later called the Tax Appeal Board, now operates under the Tax Review Board Act 1970 (SC 1970-71, c.11) which was proclaimed December 15, 1971. The Board is declared by statute to be a court of record and has jurisdiction to hear appeals by taxpayers against their assessments under the Income Tax Act and the Estate Tax Act, as well as appeals under the Old Age Security Act, certain sections of the Canada Pension Plan, the Unemployment Insurance Act, and any other Act of the Parliament of Canada that specifies a right of appeal to the Board. In most instances, an appeal lies from the Board to the Federal Court of Canada with a further right of appeal from that Court to the Supreme Court of Canada. The Board shall consist of not less than three or more than seven members, and at present consists of a chairman, an assistant chairman and three other members. Its offices are located at Ottawa and it hears appeals at 24 centres throughout Canada.

and holds frequent sittings each year at the main centres such as Montreal, Toronto, Vancouver, and London, Ont. The Board is under the jurisdiction of the Minister of Justice but is independent of the Department of Justice.

Teleglobe Canada. Created in 1950 by Act of Parliament (RSC 1970, c.C-11), under the name of the Canadian Overseas Telecommunication Corporation, this Crown agency operates all overseas communications to and from Canada — whether by radio, undersea cable or international satellite. By means of international gateway switching-centres in Montreal, Toronto and Vancouver, Teleglobe Canada provides public telephone service to over 200 overseas territories. The corporation also provides public message telegraph service, Telex and private wire service to many overseas points. Teleglobe Canada is the designated operating entity for Canadian participation in Intelsat and represents Canada on the Commonwealth Telecommunications Council. It reports to Parliament through the Minister of Communications.

Telesat Canada. Telesat Canada was incorporated in 1969 by an Act of Parliament (RSC 1970, c.T-4). Its objectives are to establish satellite telecommunication systems providing telecommunication services on a commercial basis. The recommendations of a government task force on satellite policy and the use of satellite technology for domestic communications appointed in 1967 and a 1968 White Paper based to a large extent on those recommendations preceded the establishing legislation.

The authorized capital of the corporation consists of 10 million common shares without par value and 5 million preferred shares with a par value of \$10 per share. At the end of 1972, there were 6 million common shares issued and outstanding. The corporation will ultimately be owned by three main groups of shareholders: the federal government, the telecommunications common carriers and the general public. Currently, the corporation is owned by the first two groups.

Telesat is not a Crown corporation, nor is it an agent of Her Majesty. Its annual report is tabled in the House of Commons by the Minister of Communications.

Textile and Clothing Board. This Board was established by SC 1971, c.39 to receive complaints and conduct inquiries about textile and clothing goods imported into Canada under such conditions as to cause or threaten serious injury to Canadian production. After its investigative procedures are completed, the Board makes written recommendations to the Minister of Industry, Trade and Commerce. The Board consists of three members appointed by the Governor in Council and maintains its head office in the National Capital Region.

Treasury Board. The Treasury Board was first established as a committee of the Queen's Privy Council for Canada by Order in Council PC 3 of July 2, 1867, and was made a statutory committee in 1869. The Minister of Finance was appointed Chairman of the Board, with four other Privy Councillors to be designated as members by the Governor in Council. The Secretary of the Board and the members of his staff were employed by the Department of Finance.

By the Government Organization Act, 1966 (SC 1966, c.25) the Board Secretariat was established as a separate department of government with its own Minister, the President of the Treasury Board. The committee constituting the Treasury Board includes, in addition to the President, the Minister of Finance and four other Privy Councillors.

The Financial Administration Act (RSC 1970, c.F-10), defines the Treasury Board's responsibilities as the central management agency of government. These responsibilities include the organization of the Public Service, financial management, annual and longer-term expenditure planning, and expenditure control, including allocation of resources among departments and agencies of government; management of personnel functions in the Public Service; and improvement in the efficiency of management and administration in the Public Service.

The staff of the Treasury Board is divided into five branches. The Administrative Policy Branch is responsible for the development, interpretation, dissemination and evaluation of policies, guidelines and regulations in administrative areas, including the financial management systems needed to provide for adequate visibility and accountability, and other administrative inputs to government operations such as accommodation, travel, contracting, electronic data processing, etc., with a view to ensuring probity and prudence in the acquisition of administrative inputs as well as their effective and efficient use in support of departmental programs. The Planning Branch is responsible for the development and application of systems and procedures for evaluating the effectiveness and efficiency of programs and projects and for providing advice and planning assistance for organizational change in government. The Personnel Policy Branch is responsible for all matters relating to personnel management in the Public Service including manpower requirements, manpower development and training, classification, compensation benefits and representing the government in collective bargaining with bargaining agents representing employees in the Public Service.

The Official Languages Branch is responsible for the development, monitoring, evaluation and communication of the federal government's official languages policies and programs and for the application

of the Official Languages Act within the Public Service. The Program Branch is responsible for analyzing the policy, program and project proposals of departments and recommending to the Treasury Board an optimum allocation of available financial and manpower resources to achieve program objectives, and for expenditure control and estimates preparation.

The Secretariat of the Interdepartmental Committee on the 1976 Olympic Games reports to Parliament through the President of the Treasury Board.

Unemployment Insurance Commission. The Commission, an incorporated body of three commissioners, was established under the provisions of the Unemployment Insurance Act. One commissioner is appointed chairman and chief executive officer, one commissioner represents insured persons and one represents employers. The Commission administers the Act and Regulations concerning benefits. The Minister of National Revenue is responsible for the collection of unemployment insurance premiums. The Commission functions at three levels: head office in Ottawa, five regional offices and a number of district and other offices across the country. The Commission reports to Parliament through the Minister of Manpower and Immigration.

The functions of the Commission, in accordance with the Act and Regulations, are: to pay unemployment insurance benefits, as prescribed by the Act, to insured workers who are involuntarily unemployed, and to set the employer/employee premium rates each year. The Commission, with the approval of the Governor in Council, may make regulations concerning insurable employment and the payment of benefit. Under 1971 legislation, about 2 million more people were covered than under former legislation. Eight weeks of insured employment are required to qualify for benefits; and with additional weeks an interruption of earnings caused by sickness or maternity can be covered.

Uranium Canada, Limited. This Crown company, incorporated in June 1971 under the Canada Corporations Act (RSC 1970, c.C-32) pursuant to the Atomic Energy Control Act (RSC 1970, c.A-19) is an agency corporation listed in Schedule C of the Financial Administration Act (RSC 1970, c.F-10). For all purposes it is an agent of Her Majesty and its powers may be exercised only as such. The shares of the company, with the exception of the qualifying shares of the directors, are held by the Minister of Energy, Mines and Resources in trust for Her Majesty. Registered under the trade mark UCAN, the company acts as an agent on behalf of the federal government in the acquisition and future sales of the joint stockpile of uranium concentrates established under the agreement with Denison Mines Limited, entered into January 1, 1971. Denison Mines Limited acts as the sales agent for the concentrates in the joint stockpile including negotiating for contracts with customers. UCAN also acts as the agent on behalf of the federal government for future sales from the general government stockpile. The corporation's head office is in Ottawa.

War Veterans Allowance Board. This Board, established under the authority of the War Veterans Allowance Act is a quasi-judicial body consisting of eight members, including a chairman and a deputy chairman, appointed by the Governor in Council. The Board administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act. Its functions include ensuring that the 18 district authorities in various regions throughout Canada interpret the legislation in a fair, reasonable and equitable manner. The War Veterans Allowance Board is also an appeal body which considers appeals against any decision of a district authority. It reports to Parliament through the Minister of Veterans Affairs.

Appendix 2

Synopsis of legislation

Synopsis of legislation of the second session of the twenty-ninth Parliament, February 27 to May 8, 1974, passed in the twenty-third year of the reign of Her Majesty Queen Elizabeth II.

In summarizing this material it is not always possible to convey the full implications of the legislation. For further details the reader should refer to the *Statutes of Canada, 1974*. The chapter number is followed by the date of Royal assent.

Chapter 1 (March 28) *Appropriation Act No. 1, 1974* grants certain sums of money for the public service for the financial year ending March 31, 1974.

Chapter 2 (March 28) *Appropriation Act No. 2, 1974* grants certain sums of money for the public service for the financial year ending March 31, 1975.

Chapter 3 (April 3) *An Act to amend the Veterans' Land Act* provides for the alteration of the terminal dates for applications for sale, advance, loan or grant under the *Veterans' Land Act*, and provides for future review of such terminal dates.

Chapter 4 (April 10) *An Act to amend the Fisheries Development Act* extends the authority of the Minister concerned to make payments in accordance with regulations prescribed by the Governor in Council to include payments for the modification and conversion of fishing vessels.

Chapter 5 (April 10) *An Act to amend the Yukon Act, the Northwest Territories Act and the Canada Elections Act* increases the membership of the Council of the Yukon Territory from seven to 12 and provides for the Commissioner in Council to increase or decrease the number of members within limits of 12 and 20 members; provides for the Council of the Yukon Territory to elect one member to be Speaker to preside over the Council in session; identifies the Commission of the Yukon Territory as the authority responsible for the administration of those Crown lands within the Yukon Territory whose beneficial use has been allocated to the Territory; abolishes the requirement that the Deputy Commissioner of the Northwest Territories be a member of the Council and authorizes the Deputy Commissioner to act for the Commissioner when the latter is ill or unable to act; provides for replacement of the appointed members of the Council of the Northwest Territories by elected members and for increasing the membership of the Council from 14 to 15; provides for election of a Speaker for the Council of the Northwest Territories, for changing the quorum from four to a majority, and abolishes the Commissioner's power to cast a deciding vote; identifies the Commissioner as the authority responsible for the administration of those Crown lands in the Northwest Territories whose beneficial use has been allocated to the Northwest Territories; and provides that new electoral districts are not applicable to a general election of the Council of the Northwest Territories or of the Yukon Territory unless such new electoral districts have been in force for six months prior to the date of issue of the writs or, where they have not been in force for that period, the Chief Electoral Officer has been able to make the necessary preparations for holding an election based on the new electoral districts.

Chapter 6 (April 25) *Canadian National Railways Financing and Guarantee Act, 1973* authorizes the provision of moneys to meet certain capital expenditures of the Canadian National Railways System and Air Canada for the period between January 1, 1973 and June 30, 1974, and authorizes the guarantee of certain securities to be issued by the Canadian National Railway Company and certain debentures to be issued by Air Canada.

Chapter 7 (May 7) *An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Huron" in Ontario to "Huron-Middlesex".

Chapter 8 (May 7) *An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Middlesex" in Ontario to "Middlesex-London-Lambton".

Chapter 9 (May 7) *An Act to amend the Export and Import Permits Act* permits the Governor in Council to restrict the export of any article that is a product of a natural resource of Canada where national policy requires the further processing of that product in Canada; to restrict the export of raw or semi-finished materials other than an agricultural product, that is produced in Canada in circumstances of surplus supply and depressed prices of that material; and to restrict imports of any article that, under the *Farm Product Marketing Agencies Act*, is also limited in respect of production or marketing in Canada.

Chapter 10 (May 7) *An Act to amend the Farm Improvement Loans Act, the Small Businesses Loans Act, and the Fisheries Improvement Loans Act* broadens the definitions of farm improvement loans and loans for improvement of small businesses; doubles the limit for outstanding loans to individual borrowers; extends the application of these Acts to June 30, 1977; and specifies the Minister's loan liabilities for the extended period.

Chapter 11 (May 7) *An Act to amend the National Parks Act* recognizes the limitations to the power of the federal government to dispose of lands in some National Parks; authorizes the Governor in Council, with the agreement of the appropriate province, to add Crown owned lands to existing National Parks; provides for certain changes in traffic regulations in National Parks; sets aside Fort Beauséjour Historic Park and Fort Anne Historic Park as National Historic Parks and adds the description of Forillon National Park to the *National Parks Act*.

Chapter 12 (May 7) *Railway Relocation and Crossing Act* facilitates the relocation of railway lines or rerouting of railway traffic in urban areas and provides financial assistance for work done for the protection, safety and convenience of the public at railway crossings.

Chapter 13 (April 3) *An Act respecting the Eastern Canada Synod of the Lutheran Church in America* permits the Eastern Canada Synod of the Lutheran Church in America to invest in high interest yield securities and gives it broader investment powers for investment in land.

Appendix 3

Canadian chronology, 1974

Events in the general chronology from 1497 to 1866 are given in the *1951 Canada Year Book*, pp 46-49; from 1867 to 1953 in the *1954 Canada Year Book*, pp 1259-1264; and annually from that year in successive editions. The following listing covers the year 1974; it should be noted that certain dates are approximate. Acknowledgment is given to the publication *Canadian News Facts*, Toronto, which has served as a reference in the preparation of this chronology.

January

Jan. 1, Merger of Montreal and Canadian stock exchanges in Montreal; Canadian Stock Exchange listings absorbed by Montreal Stock Exchange. *Jan. 6*, Global Television, third English-language television network established in Canada, began broadcasting in southern Ontario. *Jan. 7*, Bora Laskin sworn in as Chief Justice of the Supreme Court of Canada. *Jan. 11*, Announcement of the retirement of Celia Franca after 23 years as artistic director of the National Ballet of Canada; David Haber succeeded her July 1. *Jan. 12*, Sale of *Le Soleil* of Quebec City, second largest French-language daily newspaper in Canada, to Unimedia Inc. announced by owner Jacques Francoeur. *Jan. 14*, First session of 29th Parliament recessed until Feb. 26. Chief Justice Laskin, acting for the Governor General, gave Royal assent to four major bills: Protection of Privacy Act, Energy Supplies Emergency Act, Oil Export Tax Act and Election Expenses Act. Jules Léger installed as 21st Governor General of Canada, succeeding Roland Michener. *Jan. 15*, Death of Andrew Allan, radio and television dramatic director and writer, aged 66, in Toronto. *Jan. 17*, Pauline McGibbon, chancellor of the University of Toronto, appointed Lieutenant Governor of Ontario succeeding Ross MacDonald. *Jan. 22-23*, National Energy Conference held in Ottawa to negotiate petroleum prices in Canada; agreement reached to subsidize oil prices in eastern Canada and restrain prices in the rest of the country. *Jan. 24*, K.C. Irving Ltd. and three associated companies found guilty by New Brunswick Supreme Court of forming a monopoly of English-language daily newspapers in New Brunswick; they were fined a total of \$150,000. *Apr. 2*. *Jan. 25*, Air Canada and CP Air announced fare increases averaging 10.5% on domestic flights effective Feb. 24. Quebec Premier Robert Bourassa announced a plan to compensate natives of the James Bay region for the proposed hydro-electric project; the offer included up to \$100 million and changes to development plans; it was rejected by native leaders Feb. 5. *Jan. 28*, David French of Toronto awarded the Chalmers Award for the best Canadian play of 1973, for *Of the fields, lately*. William Goodridge Roberts, Montreal painter, died, aged 69. *Jan. 30*, Guidelines aimed at restricting the export of capital from Canada withdrawn by Finance Minister John Turner following the lifting of US restrictions on foreign investment by its citizens.

February

Feb. 1, Canada announced the establishment of diplomatic relations with four oil-producing Arab countries: Bahrain, Oman, Qatar and the Union of Arab Emirates. Total of 21 charges laid against six Ontario and Quebec food stores after investigations by the Food Prices Review Board; charges involved contravention of the Weights and Measures Act, misleading advertising and grading specifications. *Feb. 2*, Conclusion of Tenth Commonwealth Games in Christchurch, New Zealand; Canada placed third over-all with 25 gold, 19 silver and 18 bronze medals. Canadian figure skating championships held in Moncton, NB; Toller Cranston won the men's title for the fourth time, Lynn Nightingale won the women's title. *Feb. 11-13*, An international conference on energy held in Washington attended by Finance Minister John Turner and External Affairs Minister Mitchell Sharp; delegates agreed to the formation of an international committee and to attempt to prevent balance of payments problems in rich countries and bankruptcy in poor ones due to increasing oil prices. *Feb. 12*, Gabriel Loubier announced his resignation as leader of Union Nationale party in Quebec, ending 12 years in politics; Maurice Bellemare was elected interim leader March 30. Report on the status of women in PEI released; recommendations included extensive changes in law and the establishment of a women's division of government. *Feb. 13*, Indian-Eskimo coalition denied permission by Quebec Court of Appeals to proceed on request for a permanent injunction against the James Bay hydro-electric development, pending outcome of an appeal of interlocutory injunction won by natives in Quebec Superior Court Nov. 15, 1973 but suspended by the Quebec Court of Appeals on Nov. 22, 1973. *Feb. 14*, Secretary of State Hugh Faulkner announced a \$50 million plan to extend CBC radio and television services to the North. *Feb. 19-20*, Federal-provincial meeting of welfare ministers in Ottawa rejected a single omnibus program to replace existing welfare programs in Canada and agreed to remove inequalities in payments to men and women under the Canada and Quebec pension plans. *Feb. 21*, Tim Horton, defenceman in the National Hockey League for 22 years, killed in a car accident near St. Catharines, aged 44. New immigration regulations placing increased emphasis on occupational demand announced by Manpower and Immigration Minister Robert Andras. *Feb. 27*,

Second session of 29th Parliament opened. *Feb. 28*, Spending estimate for 1974-75 fiscal year tabled in the House of Commons; the total of \$22 billion was \$2.4 billion more than the previous year's spending.

March

Mar. 1, The BC Court of Appeal ruled that an Indian child may be adopted by non-Indian parents without losing his Indian status. *Mar. 7*, Urban Affairs Minister Ron Basford announced a five-year project by the federal government to buy or build 50,000 housing units to be purchased by rural and native families, with payments based on income. *Mar. 11*, Death of Boris Volkoff, founder of the Volkoff Canadian Ballet Company in Toronto, aged 74. *Mar. 12*, The Liberal government survived a non-confidence vote in the House of Commons by promising to reconsider its decision to allow the Veterans' Land Act to expire March 31. *Mar. 13*, Indian and Northern Affairs Minister Jean Chrétien announced that off-shore drilling in the Beaufort Sea would be banned until at least the summer of 1976 to allow environmental studies to be undertaken. *Mar. 14*, Speech from the Throne in the Quebec Assembly announced the provincial government's intention to make French the official language of Quebec. *Mar. 17-19*, Convention of the Progressive Conservative party held in Ottawa; Robert Stanfield confirmed as leader and Michael Meighen elected party president. *Mar. 18*, Death of Bruce Marsh, 48, a well-known broadcaster for over 20 years. *Mar. 19*, Quebec Social Affairs Minister Claude Forget announced a program of free dental care to all children under eight in the province; the plan was expected to cost \$9 million and cover 600,000 children in its first year. *Mar. 26*, Quebec Labour Minister Jean Cournoyer announced that a full inquiry would be held into violence on the James Bay construction site after its shutdown March 20. *Mar. 27*, Interim oil policy agreement reached by Prime Minister Trudeau and the provincial premiers; the price of domestic crude oil to rise to \$6.50 a barrel April 1 from \$4 a barrel.

April

Apr. 2, The Supreme Court of Canada ruled the federal Official Languages Act legal; action was brought against it by Leonard Jones, mayor of Moncton, NB. Premier Gerald Regan re-elected in Nova Scotia; final results were Liberals 31 seats, Progressive Conservatives 12, and NDP three. *Apr. 5*, Death of A.Y. Jackson, member of the Group of Seven landscape painters, in Kleinburg, Ont., aged 91. *Apr. 8*, House of Commons gave final approval to legislation increasing the size of the Council of the Yukon Territory from seven to 12 members and that of the Northwest Territories from 14 to 15, permitting the former to be entirely elected and allowing the Council itself to decide when membership would be increased or decreased. Agriculture Minister Eugene Whelan announced restrictions on

the import of cattle treated with the growth hormone diethylstilbestrol (DES). *Apr. 9*, A bill placing 50% tax on profits on property bought and sold without real value added, introduced in the Ontario Legislature; the bill passed June 3. A coroner's jury ruled that nitrous oxide from incorrectly connected medical gas lines was responsible for the deaths of nine patients at Sudbury General Hospital in 1973. *Apr. 12*, The Canadian Radio-Television Commission gave approval for takeover of Global Communications Ltd. by IWC Communications Ltd. of Toronto. *Apr. 17*, The Saskatchewan government announced a plan to provide free prescription drugs to residents, who would pay only dispensing costs. *Apr. 22*, Death of Roch Pinard, Secretary of State in the Cabinet of former Prime Minister Louis St-Laurent from 1954 to 1957. *Apr. 23*, Jean Gascon, artistic director of the Stratford Festival, named winner of the \$50,000 Royal Bank Award. Falconbridge Nickel Mines Ltd., Sudbury, ordered to close temporarily by Ontario Environment Ministry after air pollution index reached 102, the first time an industry had been ordered to close completely. *Apr. 25*, External Affairs Minister Mitchell Sharp announced Canada would extend participation in the United Nations Emergency Force in the Middle East for six months. *Apr. 26*, Quebec Court of Appeal overturned the acquittal in November 1973 of Dr. Henry Morgentaler on a charge of performing an illegal abortion. *Apr. 29*, Premier Alex Campbell's Liberal party returned to power in PEI election with 26 of the province's 32 seats; Progressive Conservatives held the remaining six seats.

May

May 3, The Alberta government announced a \$25 million rebate plan to ensure that consumers in the province would not face increases of more than 5% in the cost of natural gas. *May 7*, CTV Television Network Ltd. received the Roland Michener Award for journalism for 1973 for a program on the invasion of privacy through electronic techniques. *May 9*, The 29th Parliament was dissolved and writs issued for a general election July 8, following defeat of the minority Liberal government in the House of Commons. Death of Ernest Halpenny, Secretary of State in the Cabinet of former Prime Minister Diefenbaker in the early 1960s. *May 13*, The Bank of Canada raised its prime lending rate to 8.75%. *May 13-17*, Biennial convention of the 1.8-million-member Canadian Labour Congress in Vancouver attended by 2,500 delegates; Joe Morris elected president. *May 15*, Death of Lt. Gen. Guy G. Simonds, senior Canadian battlefield commander in World War II, aged 71. *May 17*, Governor General's Award winners announced: *Painters in a new land*, a history of 18th and 19th century painters by Michael Bell, Kingston; *Lions at her face*, a collection of poetry by Miriam Mandel, Edmonton; *Temptations of Big Bear*, a novel by Rudy Wiebe, Edmonton; *L'hiver de Force*, a novel by Réjean Ducharme, Montreal; *Québec en Amérique au 19^e*

siècle, an economic history by Albert Faucher, Quebec City; and *La Main au Feu*, a collection of poems by Roland Giguère, Montreal, who refused his award on political grounds. Lucien Lamoureux, Independent member of the House of Commons and Commons Speaker since 1966, announced his retirement from politics; he was appointed Canadian ambassador to Belgium June 10. *May 22*, New feed grains policy announced by the Minister responsible for the Wheat Board, Otto Lang, to create an open market for domestic feed grains that would permit buyers from outside the Canadian Wheat Board region to deal directly with grain producers. Canada announced suspension of shipments of all nuclear equipment and material to India following that country's detonation of a nuclear device using Canadian materials *May 18*. *May 23*, Preliminary draft of revised statutes of New Brunswick tabled in the NB Legislature, the first province with a common law background to draft statutes in both official languages. *May 27*, The federal government announced intention to purchase de Havilland Aircraft of Canada Ltd. and Canadair Ltd., both foreign-owned, and to seek Canadian interests to buy the companies as a unit.

June

June 3, An appeal by Jacques Rose, convicted of accessory after the fact in the kidnapping of Pierre Laporte in 1971, refused by Quebec Court of Appeal. *June 6*, The Ontario government announced plans to study health hazards facing miners in gold and uranium mines. *June 8*, Governor General Jules Léger admitted to hospital after suffering a stroke in Sherbrooke, Que. *June 10*, David McTaggart, Canadian captain of the nuclear protest ship Greenpeace III, served a writ on the French government charging civil and criminal liability of 100,000 francs (\$21,000) in the ramming of the ship by a French vessel off Mururoa Atoll in 1972. *June 11*, Prime Minister Trudeau announced that aid totalling \$55 million would be granted to victims of flooding of the Gatineau and Ottawa rivers. Quebec Premier Robert Bourassa presented directives that would require members of his Cabinet to divulge financial and land holdings, and forbid private companies in which ministers hold shares to deal with government departments. Donald Jack awarded 1973 Leacock Award for humour for *That's me in the middle*. *June 17*, Nominations for July 8 federal election closed with a record 1,209 candidates contesting the 264 seats. *June 18-19*, North Atlantic Treaty Organization meeting held in Ottawa. *June 20*, Agreement to fight possible coastal pollution by ocean-going oil carriers signed by US and Canada after two years of negotiations. *June 25*, Agreement to sell 74.6 million bushels of wheat valued at \$50 million to China announced. *June 28*, Sixty-four Canadians named to the Order of Canada, including five named Companions of the Order: Gerald Fauteux, Cardinal G.B. Flahiff, Norman Mac-Millan, Louis Quilico, Joseph Sedgwick.

July

July 2, Chief Justice Bora Laskin sworn in as administrator of the Government of Canada, assuming powers of Governor General Léger during his illness. Mikhail Baryshnikov, Russian dancer who defected June 29 while on tour with the Kirov Ballet Company, granted permission to remain in Canada by Immigration Minister Andras. Andrew Davis appointed music director and conductor of Toronto Symphony Orchestra. *July 3*, Law of the Sea conference held in Caracas, Venezuela; Environment Minister Jack Davis called for restriction on deep-sea salmon fishing and extension of coastal jurisdiction to 200 miles off the coast. *July 4*, Gordon A. Winter installed as Lieutenant Governor of Newfoundland succeeding John Harnum. *July 8*, Liberals gained a majority government in the federal election; final standings were: Liberals 141 seats, Progressive Conservatives 95, New Democratic Party 16, Social Credit 11 and one Independent. *July 11*, US Treasury Department instituted anti-dumping action against Canadian chicken eggs shipped to US. *July 17*, New Democratic Party elected Ed Broadbent interim parliamentary leader after defeat of party leader David Lewis in the July 8 election. *July 22*, Anicinabe Park in Kenora was occupied by about 100 Indians claiming ownership of the park. *July 23*, The Bank of Canada raised its prime lending rate to 9.25%. *July 25*, The federal government announced an increase in the size of the Canadian contingent in the UN peacekeeping force on Cyprus from 486 to 950 men at the request of UN Secretary General Kurt Waldheim. Dr. Henry Morgentaler, convicted of performing an illegal abortion, sentenced to 18 months in prison. *July 30*, Quebec's Official Language Act given final approval in provincial legislature, making French the official language of Quebec.

August

Aug. 2, Ban on import of US meats lifted, after agreement reached with Washington to exclude meat treated with diethylstilbestrol (DES). *Aug. 6*, Prime Minister Trudeau announced that James Jerome, member-elect of Parliament for Sudbury, would be nominated Speaker of the House. *Aug. 8*, Prime Minister Trudeau announced the new Cabinet: Herbert Gray, Stanley Haidasz, Robert Stanbury, Jean-Eudes Dubé, Paul Martin and Jack Davis left the Cabinet; new members were Barnett Danson, Judd Buchanan, Romeo LeBlanc and Senator Raymond Perrault. US President Richard Nixon resigned; Vice-President Gerald Ford sworn in as President. *Aug. 9*, Nine Canadians killed when a UN aircraft crashed in the Middle East; a Defence Department report released Dec. 19 concluded the plane was shot down by surface-to-air missiles "probably fired within Syrian territory". *Aug. 14*, Federal Progressive Conservative Leader Robert Stanfield announced his intention to resign as leader of the party and leave politics before the next federal election. *Aug. 16*, Cindy Nicholas, 16, of

Scarborough, Ont., swam across Lake Ontario in 15 hours and 18 minutes, almost three hours under previous record. *Aug. 23*, Yvon Duhamel, union representative who pleaded guilty June 17 to charges of arson and mischief arising from violence on the site of the James Bay hydro-electric development, sentenced to 10 years in prison. *Aug. 24*, Death of W.G. Prudham, federal Minister of Mines and Technical Surveys from 1950 to 1957. End of the first Francophone International Youth Festival in Quebec City; the festival featured over 300 sports and cultural events and 1,600 people from 25 French-speaking countries participated. *Aug. 25*, Death of M.J. Coldwell, aged 85, from 1942 to 1958 leader of the Co-operative Commonwealth Federation, forerunner of the New Democratic Party. *Aug. 28*, A tentative agreement reached with Indians occupying Anicinabe Park in Kenora; the town agreed to grant free access to the park until May 1975. Eastern Townships riding of Johnson won in by-election by Union Nationale leader Maurice Bellemare, who became the sole UN member in the Quebec Assembly.

September

Sept. 6, Energy Minister Donald Macdonald announced a uranium policy to guarantee supplies for domestic users for existing and planned nuclear plants for 30 years. *Sept. 9*, Canada Savings Bonds yielding 9.75% at maturity offered for sale; sales were ended Nov. 15, after they raised a net \$4.02 billion. *Sept. 11*, The government extended the term of the Canadian contingent stationed with UN peacekeeping forces in Cyprus by two months, to December 1974. *Sept. 12*, The Canadian Egg Marketing Agency announced that a total of 28 million eggs had been destroyed by the agency because they had rotted due to improper storage. *Sept. 12-13*, Fifteenth annual premier's conference held in Toronto. *Sept. 16*, Rénaude Lapointe appointed Speaker of the Senate. US President Gerald Ford offered amnesty to draft dodgers living in Canada and elsewhere if they would swear allegiance to the US and work for 24 months in public service jobs with minimal pay; offer was rejected by draft-dodgers' organizations. *Sept. 17*, First female recruits for the RCMP entered training in Regina. *Sept. 19*, Fernand Lalonde appointed Minister responsible for language in the Quebec Cabinet. *Sept. 20*, Energy Minister Donald Macdonald announced an increase in the price of natural gas exported to the US; increase to average 66%. *Sept. 21*, BC government announced a 50% increase in price of natural gas exported to US. *Sept. 22-24*, Official visit to Ottawa of Japanese Prime Minister Kakuei Tanaka; talks with Prime Minister Trudeau covered trade, nuclear disarmament, economic conditions and foreign investment. *Sept. 30*, First session of 30th Parliament opened in Ottawa; the Throne speech concentrated on plans to fight inflation. Attempts by about 200 Indians to enter Parliament buildings prevented by RCMP; fighting broke out after Indians attempted to break

through a police barricade; Indians later occupied an old stone mill owned by the National Capital Commission.

October

Oct. 2, Urban Affairs Minister Barnett Danson announced that grants under the Assisted Home Ownership Program would be limited to new housing. Prime Minister Trudeau said the federal government would not initiate action against the Quebec Language Act; Quebec Association of Protestant School Boards announced Oct. 19 it would challenge the Quebec Official Language Act in court. *Oct. 3*, Sony Corporation, listed on the Montreal Stock Exchange, the first Japanese company on a Canadian stock exchange. *Oct. 4*, Michael Pitfield, 37, named Clerk of the Privy Council and Secretary to the Cabinet. *Oct. 6*, Team Canada, a hockey team comprising players from the World Hockey Association, lost an eight-game series with the Soviet Union's team; Soviets won four games, Canada one, and three were tied. *Oct. 8*, Paul Martin, former Cabinet minister and senator, appointed Canadian High Commissioner to Britain. *Oct. 15*, Former RCMP constable Robert Samson held criminally responsible for a bomb blast that damaged the Montreal home of Steinberg's Ltd. president Melvyn Dobrin July 26. Ontario provincial riding of Stormont won by New Democratic candidate George Samis in by-election. *Oct. 21-22*, Prime Minister Trudeau visited France; talks with French President Giscard d'Estaing centred on trade. *Oct. 25*, New income tax rates and revised exemptions introduced in Parliament. Pauline Jewett installed as president and vice-chancellor of Simon Fraser University in Burnaby, BC. *Oct. 26*, Joseph R. Smallwood, premier of Newfoundland 1949-72, lost an attempt to regain the leadership of the provincial Liberal party. *Oct. 30*, A one-day conference on inflation and the economy attended by 10 provincial premiers and the Prime Minister in Ottawa.

November

Nov. 6, World Food Conference held in Rome; External Affairs Minister Allan MacEachen pledged \$785 million in food aid to starving nations over three years, subject to comparable action by other countries. *Nov. 7*, A fourth Ontario Progressive Conservative seat lost in a by-election in Carleton East riding; Liberal Paul Taylor defeated Ottawa Mayor Pierre Benoit. *Nov. 8*, Amendments to the Canada Pension Plan providing for equal treatment for male and female contributors given Royal assent. Ontario government report prepared in 1972 released, stating that fish containing more than one part per million of mercury may present a hazard to health and that fish in some northwestern Ontario lakes exceeded that level. *Nov. 10*, Montreal Mayor Jean Drapeau won a sixth term; final standing in the city council: 35 Civic Party members and 19 Montreal Citizens' Movement

members. Parti Cr ditiste members voted at convention in Quebec to change the party name to Ralliement Cr ditiste. *Nov. 13*, Ontario Transportation Minister John Rhodes announced cancellation of the \$25 million development contract with Kraus-Maffei for urban transportation system in Toronto. *Nov. 15*, The Bank of Canada lowered the interest rate for chartered banks to 8.75% from 9.25%. Agreement in principle signed in Montreal to give natives in the James Bay region about \$150 million tax free in compensation for land lost through the James Bay hydro-electric project. *Nov. 16*, US President Ford announced restrictions on imports of Canadian meat, cutting beef imports to 30% of the previous five-year average and pork to 50%. *Nov. 18*, Federal budget introduced in the House of Commons; reduced personal income taxes and increased funds for housing were the main points. A provincial election in New Brunswick returned the Progressive Conservative government of Premier Richard Hatfield with a slightly increased majority. *Nov. 22*, The federal government announced it would reduce exports of crude oil to the US beginning 1975 and halt them by 1982 in an attempt to extend Canada's self-sufficiency in oil. *Nov. 24*, Montreal Alouettes won the Grey Cup and the Canadian Football League Championship. *Nov. 28*, The federal government announced a plan to study the feasibility of harnessing the tides in the Bay of Fundy for hydro-electric power; cost of the study to be \$3 million. Executive vice-president of the Canadian Labour Congress, Shirley Carr, elected vice-chairman of International Labour Organization conference of American states.

December

Dec. 1, Formation of a third Quebec social credit party to be called *Parti R formateur* announced in

Quebec City. *Dec. 4*, The first meeting between US President Gerald Ford and Prime Minister Trudeau, in Washington. *Dec. 6*, Atlantic Richfield Canada Ltd. announced its withdrawal from the Syncrude project to produce synthetic oil from the Alberta oilsands. *Dec. 9*, Federal-provincial meeting of finance ministers held in Ottawa; federal plans to fight inflation were discussed. The Ontario Legislature passed an amendment to the land speculation tax act reducing the tax from 50% to 20% because of the federal government's refusal to allow the tax as a deduction for federal income tax purposes. *Dec. 12*, Alberta Premier Peter Lougheed announced a six point plan to aid the Alberta oil industry, including returning a portion of royalties to oil companies. *Dec. 16*, The Commons committee studying the marketing of eggs in Canada presented its final report; recommendations included penalties for over-production of eggs, and that surplus eggs be sold cheaply to the poor. A bill introduced in the House of Commons to increase members' salaries by 50% delayed by points of parliamentary procedure and on *Dec. 20* Prime Minister Trudeau announced postponement of the bill. *Dec. 17*, Late Quebec Labour Minister Pierre Laporte cleared of charges linking him with organized crime in a report by a Quebec commission on organized crime. *Dec. 20*, Royal assent given to a bill to increase the size of the House of Commons from 264 to 282 seats by the next federal election. Organizing committee for the 1976 Olympic Games and the city of Montreal announced that the cost of construction at the Olympic site had increased from \$260 million to \$580 million. *Dec. 30*, All US buyers of natural gas exported from the western provinces agreed to an average 66% price increase effective Jan. 1, 1975, according to a spokesman for the National Energy Board.

Appendix 4

Canadian honours

An exclusively Canadian honours system was introduced in 1967 with the establishment of the Order of Canada. The honours system was enlarged in 1972 with the addition of the Order of Military Merit and three decorations to be awarded in recognition of acts of bravery.

The Order of Canada, instituted on July 1, 1967, the 100th anniversary of Confederation, is designed to honour Canadians for outstanding achievement and service to their country or to humanity at large. Originally, two levels of membership were provided: Companions of the Order and recipients of the Medal of Service. The Order was revised in 1972 and now comprises three categories of membership: Companions, Officers — which includes all those who received the Medal of Service — and Members. The latter category is intended especially to recognize service in a locality or in a particular field of activity. Not more than 15 persons may be appointed in any one year as Companions and the total number of Companions is not to exceed 150. Officers of the Order may be appointed to the number of 40 persons a year and up to 80 persons may be appointed yearly as Members of the Order.

All Members of the Order are entitled to have letters placed after their names, as follows: for the Companion CC, for the Officer OC and for the Member CM.

Her Majesty The Queen is Sovereign of the Order and the Governor General holds office as Chancellor and Principal Companion. Appointments to the Order are made, with the approval of the Sovereign, by the Governor General assisted by an Advisory Council which meets twice a year under the chairmanship of the Chief Justice of Canada. Members of the Advisory Council include the Clerk of the Privy Council, the Under-Secretary of State, the Chairman of the Canada Council, the President of the Royal Society of Canada, the President of the Association of Universities and Colleges of Canada and not more than two other members who may be appointed by the Governor General from among the present members of the Order.

While Canadians are the primary recipients of the Order, the constitution provides that persons who are not Canadian citizens and whom Canada desires to honour may be appointed as honorary members at any of the three levels of membership.

The Order of Military Merit has been established to provide a means of recognizing conspicuous merit and exceptional service by members of the Canadian Armed Forces, both Regular and Reserves. The Order has three levels of membership: Commander (CMM), Officer (OMM) and Member (MMM).

The Queen is the Sovereign of the Order and the Governor General is the Chancellor as well as being a Commander of the Order. The Chief of the Defence Staff is the Principal Commander of the Order. Appointments to the Order are made by the Governor General on the recommendation of the Minister of National Defence; nominations are made by the Chief of the Defence Staff who is assisted by an advisory committee for the Order.

The number of appointments made annually will vary, depending on the number of nominations submitted and approved. The Order's constitution stipulates, however, that the total number of appointments made annually will not exceed one tenth of one percent of the Forces' average strength. Members of foreign armed forces who render particularly meritorious service to Canada or the Canadian Armed Forces in the course of their military duties may be made honorary members of the Order at any of the three levels.

Canadian bravery decorations. A Medal of Courage was included in the Order of Canada in 1967 but it was found that a single medal would not serve to recognize in an equitable manner acts of bravery which entail varying degrees of risk. Consequently, no awards were made and the medal has now been superseded by a series of three decorations: the Cross of Valour (CV), the Star of Courage (SC) and the Medal of Bravery (MD). Instances of extraordinary heroism in circumstances of extreme peril will be marked with the award of the Cross of Valour; other outstandingly courageous actions may qualify for the award of the Star of Courage or the Medal of Bravery. The bravery decorations are awarded with the approval of the Sovereign by the Governor General on the advice of the Canadian Decorations Advisory Committee. They may be awarded to civilians, members of the Canadian Armed Forces and of the protective services, and may be awarded posthumously.

ORDER OF CANADA

Appointment Date June 26, 1974

Companions

Le très hon. Gérard Fauteux, CC, LLD, DCL,
LLM

His Eminence Cardinal George B. Flahiff, CC,
csb, BA, DD, LLD

Dr. Norman J. MacMillan, CC, QC, LLB, LLD
 M. Louis Quilico, CC
 Dr. Joseph Sedgwick, CC, QC, LLD

Officers

M. Louis de la Chesnaye Audette, OC, CR, LPh, LLB
 M. Marcel Belanger, OC, CA, M.ès.A., MScCom, DScAdm, CGA
 M. Ernest Cormier, OC, BScA, FRAIC, RCA, FRIBA
 Mrs. Dora de Pedery-Hunt, OC, ARCA
 Mr. William Dodge, OC, BA
 Mr. Harold R. Griffith, OC, MM, MDCM, FRCP(C)
 M. Louis-Edmond Hamelin, OC, MScSoc, DGéog., SRC
 Dr. Robert M. Hardy, OC, DSc, DLS, FRSC, FEIC, PEng
 Dr. William S. Hoar, OC, PhD, DSc, FRSC
 Dr. John P. Humphrey, OC, BCL, PhD, DScSoc, LLD
 M. Martin J. Légère, OC, MScCom, DScSoc, DScAdm
 Mr. Thomas H. Manning, OC
 Dr. B. Margaret Meagher, OC, MA, DCL
 Dr. Albert B. Perlin, OC, DLitt
 Dr. William A. Riddell, OC, MSc, PhD
 Mrs. Laura Sabia, OC, BA
 Dr. Albert W. Trueman, OC, DLitt, LLD, FRSC
 Dr. John Weinzwieg, OC, DMus
 Dr. Gordon Winter, OC, LLD

Members

Mr. George Athans, CM
 Mme Jeanine Beaubien, CM, DCL
 Mr. E. Patrick Callison, CM
 Mr. W. Kenneth Campbell, CM
 Major Winslow Aubrey S. Case, CM
 Mr. J.G. Channing, CM
 Dr. Harry Cohen, CM, LLD
 Mme Simone David-Raymond, CM
 Mr. Brian Doherty, CM, QC
 Mme Marcelle Everitt, CM
 Mr. Donald Frisby, CM, BA
 Mlle Jeannine Guindon, CM, DPs
 Mme Gabrielle Hannan, CM
 Mr. Harvey H. Harnick, CM
 The Reverend J. Dinnage Hobden, CM, DD
 Dr. D. Park Jamieson, MBE, CM, QC, LLD
 Dr. Vladimir J. Kaye, CM, PhD
 Mr. Robert H.B. Ker, CM
 Mrs. May Laidlaw, CM
 Mr. A. Hollis Marden, CM
 Dr. Frederick Mendel, CM, LLD
 Mr. Alan Mills, CM
 Dr. Laura B. McCain, CM, LLD
 Mrs. Christine F. Nornabell, CM, BA
 Mrs. Gertrude O'Keefe, CM
 Dr. Florence M. O'Neill, CM, MA, DEd, LLD
 Dr. D. Mary Pack, CM, LLD
 Dr. Charles Peaker, CM, FRCO
 Mr. George Porteous, MBE, CM, BA

Mlle Helena F. Reimer, CM, RN, MA, LLD
 Dr. Katherine Riddell, CM, BA, LLD
 Mr. Charles H. Rushton, CM
 M. Maurice Samson, OBE, CM, CA, MA, DSc(Com)
 Mr. Svein Sigfusson, CM
 Lieutenant-Colonel Edwin A. Spearing, MBE, CM, RCASC
 Mr. David Stevens, CM
 Mme Adine Tremblay, CM
 M. Antonio Tremblay, CM
 Mr. Herman Voaden, CM, MA, FRSA
 Mr. William Watson, CM

Appointment Date December 18, 1974 Companions

L'hon. Claude Castonguay, CC, MNA, FSA, FICA
 The Hon. Emmett Matthew Hall, CC, QC, DCL, DMed, LLD
 The following Officers were elevated to Companions:
 L'hon. Thérèse F. Casgrain, CC, OBE, LLD
 Dr. J. Tuzo Wilson, CC, OBE, VA, ScD, PhD, LLD, DSc, DUniv, PEng, FRCA, FRS, FRSC

Officers

Mr. Anthony Adamson, OC, MA, MTPIC, FRAIC
 Professor Harry Adaskin, OC
 Dr. Doris Anderson, OC, LLD
 M. Louis Berlinguet, OC, BSc, DSc
 Dr. Pierre Berton, OC, BA, LLD, DLitt
 Dr. Gwendolyn M. Black, OC, BMus, LLD
 Dr. Ernest Buckler, OC, DLitt, LLD, BA, MA
 L'hon. Léo Cadieux, CP, OC, BA, BComm.
 M. Julien Chouinard, OC, CD, CR, MA, LLL
 Dr. A. Searle Leach, OC, BA, LLD
 M. Paul H. Leman, OC, BA, LLL
 The Hon. William Ross Macdonald, PC, OC, CD, QC, LLD
 The Hon. J.W. Grant MacEwan, OC, BSA, MS, LLD
 Dr. Grace MacInnis, OC, BA, LLD
 Professor John Charles Polanyi, OC, BSc, DSc, PhD, FRS, FRSC
 Dr. Kate Reid, OC, PhD
 The Very Rev. Laurence K. Shook, OC, csb, MA, PhD, DLitt
 M. le docteur Jacques Turcot, OC, MD, LMCC, FRSC(C), FACS
 Mr. Philip Fischel Vineberg, OC, QC
 Dr. Norman Ward, OC, MA, PhD, FRSC

Members

Mr. Montague Ewart Alford, CM
 M. Claude B. Aubry, CM, BLS, BA
 Mr. Robert F. Battle, CM
 Mrs. Carrie Best, CM
 Dr. J. Burgon Bickersteth, MC, CM, BA, MA, LLD, FSA, AFC
 Mr. Andrew A. Briosi, CM

M. Jean Carignan, CM
 Mr. James A. Coleman, CM
 Dr. Herbert T. Coutts, CM, BA, MA, PhD
 Mrs. I.M.B. Dobell, CM, BA
 Mr. David M. Elder, CM, BA, MEd
 Mr. Ronald A. Fabro, CM
 Mme Florence Fernet-Martel, CM
 Mr. Vincenzo Ficocelli, CM
 M. Gilbert Finn, CM, BA, CLU
 Mrs. Lenah Fisher, CM
 Mme Françoise Gaudet-Smet, CM
 Mme Nicole Germain, CM
 Dr. Reva Gerstein, CM, MA, PhD, LLD
 M. le docteur Alphonse Giguère, CM, MD
 The Right Reverend Monsignor Anthony J. Gocki, CM, CP, VF, STL
 Mr. Gerard F.J. Guichon, CM
 Sister Mary Henry, CM, CSM, BA, MSW, ACSW, LLD
 Dr. Nora Hodgins, CM, BA, FOTF, LLD
 Miss Helen Huraj, CM, BA, MSW, ACSW
 Mrs. Renée Kaye, CM
 M. Jules Labarre, CM, BA, L.Pharm., L.és.L., D.és.Sc., SRC
 Major James F. Leys, CM, CD, SB
 M. Dollard Morin, CM, BA
 Mr. Raymond Alan Munro, CM, LLB
 Mr. Evan McCormick, CM, FCIS
 Dr. Robert McMichael, CM, DLitt
 Mr. Albert E. Peacock, CM, BSc, BPaed
 Mr. Eugene Donald Reimer, CM
 Mr. James W. Ross, CM
 Mlle M.A. Pauline Sabourin, CM
 Mr. Ernest G. Sterndale-Bennett, CM
 Mrs. Louise J. Stuart, CM
 His Worship Frederick M. Tessier, CM, JP
 Mr. Tommy Tompkins, CM
 Chief Isadore Yukon, CM

ORDER OF MILITARY MERIT

Appointment Date June 17, 1974

Commanders

Brigadier-General Sydney Valpy Radley-Walters, CMM, DSO, MC, CD
 Brigadier-General George Burnley Robertson, CMM, ED

Officers

Adjudant-chef Jean Couture, OMM, CD
 Lieutenant Commander Robert Dykes, OMM, CD
 Major Culver Weldon Gordon, OMM, CD
 Captain (N) Godfrey Harry Hayes, DSC, OMM, CD
 Colonel Owen William Lockyer, OMM, CD
 Lieutenant-colonel Fanaida Orphila Plouffe, OMM, CD
 Major Donald Stuart Robertson, OMM, CD
 Colonel Joseph Ludger Aurèle Roussell, DFC, OMM, CD
 Lieutenant-Colonel Robert Allan White, OMM, CD

Members

Capitaine Joseph Gérard Maurice Baril, MMM
 Master Warrant Officer Gerald Joseph Yvon Benard, MMM, CD
 Adjudant-chef Paul Emile Boyle, MMM, CD
 Master Corporal Weldon Thomas Bradshaw, MMM, CD
 Master Warrant Officer Arthur Frederick Brown, MMM, CD
 Sub-Lieutenant (N) Kenneth James Brown, MMM, CD
 Warrant Officer A. Bryski, MMM, CD
 Chief Warrant Officer Archibald McNeil Cairns, MMM, CD
 Master Corporal Miles Farquhar Cousens, MMM
 Master Corporal Edgar Allen Crichlow, MMM, CD
 Captain Perry Melvin Cunningham, MMM, CD
 Master Corporal Douglas Frank Day, MMM
 Sergeant Garry Deeley, MMM, CD
 Chief Warrant Officer Roy Douglas Earl, MMM, CD
 Master Warrant Officer John William Edwards, MMM, CD
 Warrant Officer Wayne Irving Morris Fairbairn, MMM, CD
 Warrant Officer Harley Garreck, MMM, CD
 Sergeant Jacob George Good, MMM, CD
 Lieutenant (M) Anne Marie Germaine Halle, MMM
 Sergeant Keith Wyman Hazel, MMM, CD
 Chief Warrant Officer Alexander Frank Jackson, MMM, CD
 Captain Brian Lambert Johnson, MMM, CD
 Adjudant-maître Jacques Julien, MMM, CD
 Chief Warrant Officer George Nathaniel Malcolm, MMM, CD
 Sergeant Lawrence James Middleton, MMM, CD
 Captain Jack Eugene Miller, MMM, CD
 Petty Officer Second Class Thomas McVarnock, MMM
 Warrant Officer Sheldon Louis Outhouse, MMM, CD
 Caporal-chef Jean Claude Paré, MMM
 Captain Ray Leonard Parsons, MMM, CD
 Chief Warrant Officer Frank John Neil Peterson, MMM, CD
 Sergeant William John Pushie, MMM, CD
 Chief Warrant Officer Abraham Sanofsky, MMM, CD
 Adjudant-chef Marc Raoul Joseph Sauvé, MMM, CD
 Sergeant Antoine Savoie, MMM, CD
 Corporal Lawrence Norman Schneider, MMM
 Sergeant Jill Yvonne Sharp, MMM, CD
 Chief Warrant Officer John Charles Trethowan, MMM, BEM, CD
 Petty Officer Second Class Fred M. Whittemore, MMM, CD
 Chief Warrant Officer Theodore Roy Yaeger, MMM, CD

Appointment Date December 9, 1974**Commanders**

Brigadier-général Robert Bérubé, CMM, MM, CD

Brigadier-General Donald Ernest Holmes, CMM, CD

Officers

Colonel Ronald Cheriton, OMM, CD

Major Dennis Walter Emberley, OMM, CD

Lieutenant-Colonel Gerald Michael Fitzgibbon, OMM, CD

Lieutenant-Colonel Ronald Farquhar Johnson, OMM, CD

Lieutenant-Colonel Donald Scofield Manuel, OMM, CD

Lieutenant-Colonel Alexander Daniel McLean Matheson, OMM, CD

Major Leonard Richard Pocock, OMM, CD

Major Eric Norman Ronaasen, OMM, CD

Colonel Rayne Dennis Shultz, DFC, OMM, CD

Captain (N) John Milton Thornton, OMM, CD

Colonel Mary Graham Vallance, OMM, CD

Members

Chief Warrant Officer Delmar Carter Aldrich, MMM, CD

Sergeant Hector McArthur Allan, MMM, CD

Adjudant-maitre Joseph Édouard Ede Richard Allan, MMM, CD

Corporal Wilfred Banfield, MMM

Master Corporal Philip Roy Berikoff, MMM

Chief Warrant Officer Kendrick Warren

Bowness, MMM, CD

Corporal Wayne Ernest Busenius, MMM

Captain Edward Peter Carey, MMM, CD

Soldat Joseph Jacques Guy Carrière, MMM

Adjudant-chef Joseph Renaud Champoux, MMM, MM, CD

Sergeant Wayne Alvin Charlebois, MMM, CD

Capitaine Jean Ursule Chatigny, MMM, CD

Captain Donald Eugene Clarke, MMM, CD

Caporal Joseph Jean Yves Cormier, MMM

Master Corporal Mladen Stanislav Dolezal, MMM

Adjudant-maitre Joseph Valmore Maurice Falardeau, MMM, CD

Chief Warrant Officer Henry John Fee, MMM, CD

Captain Barry Andrew Hamilton, MMM

Sergeant Rudi Edgar Heieck, MMM, CD

Captain Richard Nelson Hill, MMM, CD

Captain Grace Evelyn Hyde, MMM

Chief Warrant Officer George Albert Johnson, MMM, CD

Chief Warrant Officer Leonard Charles Lapeer, MMM, CD

Caporal-chef Joseph Alban Leblanc, MMM, CD

Master Warrant Officer Hugh Allan Leslie, MMM, CD

Chief Warrant Officer Charles James Longson, MMM, CD

Chief Warrant Officer Albert Mitges, MMM, CD

Sergeant Terrence Ronald Murphy, MMM, CD

Chief Warrant Officer Richard Cecil McBurney, MMM, CD

Master Corporal Guy Alexander Paterson, MMM, CD

Sergeant Joseph Charles Gaston Pepin, MMM, CD

Chief Warrant Officer Bertram Charles Robinson, MMM, CD

Warrant Officer Hector Joseph John Saulnier, MMM, CD

Sergeant Joseph Maurice Gérard Sawyer, MMM, CD

Warrant Officer Ward Everett Snyder, MMM, CD

Captain Owen Murray Sweetman, MMM, CD

Warrant Officer Donald John Vance, MMM, CD

Sergeant Thomas Henry Frederick Walton, MMM, CD

Sergeant Leon James Perry Whynott, MMM, CD

Warrant Officer Gordon James Wilson, MMM, CD

Chief Warrant Officer James Robert Zeiner, MMM, CD

BRAVERY DECORATIONS**Appointment Date February 25, 1974****Star of Courage**

Madame Evelyne Letecheur, EC

Mr. John Francis Rouble, SC

Mr. John Tirone, SC (posthumous)

Medal of Bravery

Mr. Joseph Henri Germain Albert, MB

Constable Denis Bergevin, MB

Mr. Wallace Conrad, MB

Mr. Raymond Eugene Hamblin, MB

Constable Walter Herron, MB

Lieutenant Marcel Mailloux, MB

Mr. Herman Marcheterre, MB

Sister Suzanne Morissette, MB

Mr. James Edwin O'Boyle, MB

Mr. Thomas O'Neill, MB

Mr. Thomas Patterson, MB

Mr. Robert Benjamin Rempel, MB

M. Alain Ruest, MB

Appointment Date December 13, 1974**Star of Courage**

M. Marcel Bélisle, EC

Mr. David Critch, SC (posthumous)

Mr. Theodore W. Kiehlbauch, SC

Mr. Joseph Kruselnicki, SC

Medal of Bravery

M. Yves Audet, MB

Constable Jean Albert Yves Beaudoin, MB

Mr. Lloyd Victor Bérubé, MB

Mr. Randy Lee Dalziel, MB

Constable André Claude Michel Guilbault, MB

Mr. Ellis Hibbert, MB

Mr. Edwin Simcoe, MB

Mr. Ronald S. Zelles, MB

Appointment Date December 20, 1974**Star of Courage**

Capitaine Alain Robert Pierre Joseph Forand, EC
Soldat Joseph Michel Plouffe, EC

Medal of Bravery

Soldat Joseph Mike Belley, MB
Capitaine Joseph Normand Blaqui re, MB

Soldat Joseph Michel Gingras, MB
Caporal Joseph Fernand Claude Gratton, MB
Colonel Guy H. Lessard, MB, CD
Soldat Joseph Gilles Pelletier, MB
Caporal Joseph Roland Michel Whelan, MB

Appendix 5

Diplomatic and consular representation

The following is a list of countries and organizations with which Canada maintains diplomatic, consular and/or trade representation, the status of the representatives and the postal addresses of their offices in Canada and Canadian offices abroad.

Canadian representatives abroad

Afghanistan

Ambassador: c/o Canadian Embassy, Diplomatic Enclave No. 5, Islamabad, Pakistan.

Algeria

Ambassador: PO Box 225, Alger Gare, Alger.

Argentina

Ambassador: Casilla de Correo 1598, Buenos Aires.

Australia

High Commissioner: Commonwealth Ave., Canberra ACT 2600.

Austria

Ambassador: Luegerring 10, 1010 Vienna.

Bahamas

High Commissioner: c/o Canadian High Commission, PO Box 1500, Kingston 10, Jamaica.

Bahrain

Ambassador: c/o Canadian Embassy, PO Box 1610, Tehran, Iran.

Bangladesh

High Commissioner: PO Box 569, General Post Office, Dacca-2.

Barbados

High Commissioner: PO Box 404, Bridgetown, Barbados.

Belgium

Ambassador: Rue de Loos 6, B-1000 Brussels.

Belize

Commissioner: c/o Canadian High Commission, PO Box 1500, Kingston 10, Jamaica.

Bolivia

Ambassador: c/o Canadian Embassy, Edificio El Pacifico-Washington, 7th floor, Plaza Washington, Lima, Peru.

Botswana

High Commissioner: c/o Canadian High Commission, PO Box 26005, Arcadia, Pretoria, South Africa.

Brazil

Ambassador: Caixa Postal 07-0961, 70000, Brasília DF.

Britain

High Commissioner: Canada House, Trafalgar Square, London, W1 5BJ.

Bulgaria

Ambassador: c/o Canadian Embassy, Proleterskih Brigada 69, Belgrade, Yugoslavia.

Burma

Ambassador: c/o Canadian High Commission, AIA Building, Kuala Lumpur, Malaysia.

Burundi

Ambassador: c/o Canadian Embassy, Édifice Shell, coin av. Wangata et boul. du 30-juin, Kinshasa, Republic of Zaïre.

Cameroon

Ambassador: PO Box 572, Yaoundé.

Central African Republic

Ambassador: c/o Canadian Embassy, PO Box 572, Yaoundé, Cameroon.

Chad

Ambassador: c/o Canadian Embassy, PO Box 572, Yaoundé, Cameroon.

Chile

Ambassador: Casilla 427, Santiago de Chile.

People's Republic of China

Ambassador: No. 10, San Li Tun Road, Chao Yang District, Peking.

Colombia

Ambassador: Apartado Aéreo 53531-Bogota 2.

Conference on Security and Co-operation in Europe

Ambassador: 10A avenue de Budé, 1202 Geneva.

People's Republic of the Congo

Ambassador: c/o Canadian Embassy, Édifice Shell, coin av. Wangata et boul. du 30-juin, Kinshasa, Republic of Zaïre.

Costa Rica

Ambassador: Apartado Postal 10303, San José.

Cuba

Ambassador: c/o PO Box 499 (HVA), Ottawa K1N 8T7.

Cyprus

High Commissioner: c/o Canadian High Commission, 220 Hayarkon Street, Tel Aviv, Israel.

Czechoslovakia

Ambassador: Mickiewiczova 6, Prague.

Dahomey

Ambassador: c/o Canadian Embassy, E 115/3 Independence Ave., Accra, Ghana.

Denmark

Ambassador: Prinsesse Maries Allé 2, 1908
Copenhagen.

Dominican Republic

Ambassador: c/o Canadian Embassy, Avenida La
Estancia No. 10, 16a piso, Ciudad Comercial
Tamanaco, Caracas, Venezuela.

Ecuador

Ambassador: c/o Canadian Embassy, Calle 58, No.
10-42, Bogota, Colombia.

Arab Republic of Egypt

Ambassador: Kasr el Doubara Post Office, Cairo.

El Salvador

Ambassador: c/o Canadian Embassy, 6th floor,
Cronos Building, Calle 3 y Avenida Central,
San José, Costa Rica.

Ethiopia

Ambassador: PO Box 1130, Addis Ababa.

European Communities

The European Economic Community
The European Atomic Energy Community
The European Coal and Steel Community
Head of Mission: The Mission of Canada to the
European Communities, 1040 Brussels,
Belgium.

Fiji

High Commissioner: c/o Canadian High
Commission, Commonwealth Ave., Canberra
ACT 2600, Australia.

Finland

Ambassador: P Esplanadi 25B, 00100 Helsinki 10.

France

Ambassador: 35, avenue Montaigne, 75008 Paris.

Gabon

Ambassador: c/o Canadian Embassy, PO Box 572,
Yaoundé, Cameroon.

Gambia

High Commissioner: c/o Canadian Embassy, 45 av.
de la République, Dakar, Sénégal.

Germany, Federal Republic of

Ambassador: Friedrich-Wilhelm-Strasse 18, 53
Bonn.

Ghana

High Commissioner: PO Box 1639, Accra.

Greece

Ambassador: 4 Ioannou Ghennadiou St. and
Ypsilantou, Athens 140.

Grenada

High Commissioner: c/o Canadian High
Commission, PO Box 404, Bridgetown,
Barbados.

Guatemala

Ambassador: PO Box 400, Guatemala.

Guinea

Ambassador: c/o Canadian Embassy, 45 av. de la
République, Dakar, Sénégal.

Guyana

High Commissioner: PO Box 660, Georgetown.

Haiti

Ambassador: CP 826, Port-au-Prince.

Holy See

Ambassador: Via della Conciliazione 4/D, 00193,
Rome.

Honduras

Ambassador: c/o Canadian Embassy, 6th floor,
Cronos Building, Calle 3 y Avenida Central,
San José, Costa Rica.

Hong Kong

Commissioner: PO Box 20264, Hennessy Road
Post Office, Hong Kong.

Hungary

Ambassador: Budakeszi, u. 55/d P 8, Budapest
1021.

Iceland

Ambassador: Postuttak Oslo 1, Norway.

India

High Commissioner: PO Box 5207, New Delhi.

Indonesia

Ambassador: Djalan Budi Kemuliaan No. 6,
Jakarta.

Iran

Ambassador: c/o Canadian Embassy, PO Box
1610, Tehran.

Iraq

Ambassador: c/o Canadian Embassy, CP 2300,
Beirut, Lebanon.

Ireland

Ambassador: 65 St. Stephens Green, Dublin 2.

Israel

Ambassador: PO Box 6410, Tel Aviv.

Italy

Ambassador: Via GB de Rossi 27, 00161 Rome.

Ivory Coast

Ambassador: BP 21194, Abidjan.

Jamaica

High Commissioner: PO Box 1500, Kingston 10.

Japan

Ambassador: 3-38 Akasaka 7-chome, Minato-ku,
Tokyo.

Jordan

Ambassador: c/o Canadian Embassy, Immeuble
Sabbagh, rue Hamra, Beirut, Lebanon.

Kenya

High Commissioner: PO Box 30481, Nairobi.

Korea

Ambassador: CPO Box 6299, Seoul 100.

Kuwait

Ambassador: c/o Canadian Embassy, PO Box
1610, Tehran, Iran.

Laos

Ambassador: c/o Canadian Embassy, PO Box 2090, Bangkok, Thailand.

Lebanon

Ambassador: CP 2300, Beirut.

Lesotho

High Commissioner: c/o Canadian High Commission, PO Box 26006, Arcadia, Pretoria, South Africa.

Liberia

Ambassador: c/o Canadian Embassy, BP 21194, Abidjan, Ivory Coast.

Libyan Arab Republic

Ambassador: c/o Canadian Embassy, Kasr el Doubara Post Office, Cairo, Arab Republic of Egypt.

Luxembourg

Ambassador: c/o Canadian Embassy, rue de Loxum 6, B-1000, Brussels, Belgium.

Macao

Consul: c/o Commission for Canada, PO Box 20264, Hennessy Road Post Office, Hong Kong.

Madagascar

Ambassador: c/o Canadian Embassy, African Solidarity Bldg., Hailé Sélassié 1 Square, Addis Ababa, Ethiopia.

Malawi

High Commissioner: c/o Canadian High Commission, PO Box 1313, Lusaka, Zambia.

Malaysia

High Commissioner: PO Box 990, Kuala Lumpur.

Mali

Ambassador: c/o Canadian Embassy, 45 av. de la République, Dakar, Sénégal.

Malta

High Commissioner: c/o Canadian High Commission, Via GB de Rossi 27, 00161 Rome, Italy.

Mauritania

Ambassador: c/o Canadian Embassy, 45 av. de la République, Dakar, Sénégal.

Mauritius

High Commissioner: c/o Canadian High Commission, Pan-Africa Insurance Bldg., Independence Avenue, PO Box 1022 Dar-es-Salaam, United Republic of Tanzania.

Mexico

Ambassador: Melchor Ocampo 463-7, Mexico 5, DF.

Monaco

Consul General: c/o Canadian Consulate General, 24, av. du Prado, Marseille 6^e, Bouches-du-Rhône, France.

Mongolia

Ambassador: c/o Canadian Embassy, 23 Starokonyushenny Pereulok, Moscow, USSR.

Morocco

Ambassador: BP 553, Rabat-Chellah, Rabat.

Nepal

Ambassador: c/o Canadian Embassy, Shanti Path, Chanakyapuri, New Delhi 21, India.

Netherlands

Ambassador: Sophialaan 7, The Hague.

New Zealand

High Commissioner: PO Box 12-049, Wellington North.

Nicaragua

Ambassador: c/o Canadian Embassy, 6th floor, Cronos Building, Calle 3 y Avenida Central, San José, Costa Rica.

Niger

Ambassador: c/o Canadian Embassy, Immeuble "Le Général", avenue Botreau-Roussel, Abidjan, Ivory Coast.

Nigeria

High Commissioner: PO Box 851, Lagos.

North Atlantic Council

Permanent Representative and Ambassador: 1110 Brussels, Belgium.

Norway

Ambassador: Posttuttak, Oslo 1.

Oman

Ambassador: c/o Canadian Embassy, PO Box 1610, Tehran, Iran.

Organization of American States

Ambassador and Permanent Observer: 1746 Massachusetts Ave. NW, Washington, DC, 20036, USA.

Organization for Economic Co-operation and Development

Ambassador and Permanent Representative: 19, rue de Franqueville, Paris 16^e.

Pakistan

Ambassador: PO Box 1042, GPO, Islamabad.

Panama

Ambassador: c/o Canadian Embassy, 6th floor, Cronos Building, Calle 3 y Avenida Central, San José, Costa Rica.

Paraguay

Ambassador: c/o Canadian Embassy, Brunetta Bldg., Suipacha and Santa Fé, Buenos Aires, Argentina.

Peru

Ambassador: Casilla 1212, Lima.

Philippines

Ambassador: PO Box 971, Commercial Centre, Makati, Rizal.

Poland

Ambassador: Ulica Matejki 1/5, Warsaw, 00-481.

Portugal

Ambassador: Rua Rosa Araujo 2, 6th floor, Lisbon 2.

Qatar

Ambassador: c/o Canadian Embassy, PO Box 1610, Tehran, Iran.

Romania

Ambassador: c/o Canadian Embassy, Proleterskih Brigada 69, Belgrade, Yugoslavia.

Rwanda

Ambassador: c/o Canadian Embassy, Édifice Shell, coin av. Wangata et boul. du 30-juin, Kinshasa, Republic of Zaïre.

San Marino

Consul: c/o Canadian Embassy, Via GB de Rossi 27, 00161 Rome, Italy.

Saudi Arabia

Ambassador: 6th floor, Office Tower, Commercial and Residential Centre, King Abdul Aziz St., Jeddah.

Sénégal

Ambassador: PO Box 3373, Dakar.

Sierra Leone

High Commissioner: c/o Canadian High Commission, Niger House, Tinubu Street, Lagos, Nigeria.

Singapore

High Commissioner: PO Box 845, Singapore.

Somali Republic

Ambassador: c/o Canadian Embassy, Pan Africa Insurance Building, Independence Avenue, Dar-es-Salaam, Tanzania.

South Africa

Ambassador: PO Box 26006, Arcadia, Pretoria.

Spain

Ambassador: Apartado 587, Madrid.

Sri Lanka

High Commissioner: PO Box 1006, Colombo.

Sudan

Ambassador: c/o Canadian Embassy, 6 Sharia Mohamed Fahmi el Sayed, Garden City, Cairo, Arab Republic of Egypt.

Swaziland

High Commissioner: c/o Canadian Embassy, PO Box 26006, Arcadia, Pretoria, South Africa.

Sweden

Ambassador: PO Box 16129, S-10323 Stockholm 16.

Switzerland

Ambassador: 88 Kirchenfeldstrasse, 3000 Berne.

Syrian Arab Republic

Ambassador: c/o Canadian Embassy, Immeuble Sabbagh, rue Hamra, Beirut, Lebanon.

United Republic of Tanzania

High Commissioner: PO Box 1022, Dar-es-Salaam.

Thailand

Ambassador: PO Box 2090, Bangkok.

Togo

Ambassador: c/o Canadian Embassy, E 115/3 Independence Ave., Accra, Ghana.

Tonga

High Commissioner: c/o Canadian High Commission, ICI Bldg. Molesworth St., N1 Wellington, New Zealand.

Trinidad and Tobago

High Commissioner: PO Box 1246, Port of Spain.

Tunisia

Ambassador: Boîte Postale 31, Belvedere.

Turkey

Ambassador: Nenehatun Caddesi No. 75, Gaziosmanpasa, Ankara.

Uganda

High Commissioner: c/o Canadian High Commission, Industrial Promotion Services Bldg., Kimathi St., Nairobi, Kenya.

Union of Arab Emirates

Ambassador: c/o Canadian Embassy, PO Box 1610, Tehran, Iran.

Union of Soviet Socialist Republics

Ambassador: 23 Starokonyushenny Pereulok, Moscow.

United Nations

Ambassador and Permanent Representative: The Permanent Mission of Canada to the United Nations, 866 United Nations Plaza, Suite 250, New York, NY, 10017, USA.

Ambassador and Permanent Representative: Permanent Mission of Canada to the Office of the United Nations at Geneva and to the Conference of the Committee on Disarmament, 10A avenue de Budé, 1202 Geneva.

Ambassador and Permanent Delegate: Permanent Delegation of Canada to the United Nations Educational, Scientific and Cultural Organization, 1, rue Miollis, Paris XV^e.

Permanent Representative: Permanent Mission of Canada to the United Nations Industrial Development Organization, Luegerring 10, 1010 Vienna.

Permanent Representative: Permanent Mission of Canada to the International Atomic Energy Agency, Luegerring 10, 1010 Vienna.

United States of America

Ambassador: 1746 Massachusetts Ave. NW, Washington, DC, 20036, USA.

Upper Volta

Ambassador: BP 21194, Abidjan, Ivory Coast.

Uruguay

Ambassador: c/o Canadian Embassy, Brunetta Bldg., Suipacha and Santa Fé, Buenos Aires, Argentina.

Venezuela

Ambassador: Apartado del Este No. 62302, Caracas.

Democratic Republic of Vietnam

Ambassador: c/o Canadian Embassy, San Li Tun
No. 16, Peking, People's Republic of China.

West Indies Associated States and Montserrat

Commissioner: c/o The Canadian High
Commission, Commonwealth Development
Corporation Building, Cullogen Road,
Bridgetown, Barbados.

Western Samoa

High Commissioner: c/o Canadian High
Commission, ICI Bldg., Molesworth St., N1
Wellington, New Zealand.

Yugoslavia

Ambassador: Proleterskih Brigada 69, Belgrade.

Republic of Zaïre

Ambassador: PO Box 8341, Kinshasa.

Zambia

High Commissioner: PO Box 1313, Lusaka.

Representatives of foreign countries in Canada*Afghanistan*

Ambassador: 2341 Wyoming Ave. NW,
Washington, DC, 20008, USA.

Algeria

Ambassador: 435 Daly Ave., Ottawa, K1N 6H3.

Argentina

Ambassador: 10 Driveway, Ottawa, K2P 1C7.

Australia

High Commissioner: 90 Sparks St., Suite 600,
Ottawa, K1P 5B4.

Austria

Ambassador: 445 Wilbrod St., Ottawa, K1N 6M7.

Bahamas

High Commissioner: c/o Embassy of the Bahamas,
600 New Hampshire Ave. NW, Suite 865,
Washington, DC, 20037, USA.

Bangladesh

High Commissioner: 85 Range Rd., Suite 1007,
Ottawa, K1N 8J6.

Barbados

High Commissioner: Suite 200, 151 Slater St.,
Ottawa, K1P 5H3.

Belgium

Ambassador: 85 Range Rd., Suites 601-604,
Ottawa, K1N 8J6.

Bolivia

Minister Counsellor: Washington, DC, USA.

Botswana

High Commissioner: c/o Embassy of the Republic
of Botswana, Van Ness Centre, 4301
Connecticut Ave. NW, Suite 404,
Washington, DC, 20008, USA.

Brazil

Ambassador: 450 Wilbrod St., Ottawa, K1N 6M8.

Britain

High Commissioner: 80 Elgin St., Ottawa,
K1P 5K7.

Bulgaria

Ambassador: 325 Stewart St., Ottawa, K1N 6K5.

Burma

Ambassador: 116 Albert St., Royal Trust Bldg.,
Second floor, Ottawa, K1P 5G3.

Cameroon

Ambassador: 170 Clemow Ave., Ottawa, K1S 2B4.

Central African Republic

Ambassador: 381 Wilbrod Ave., Ottawa,
K1N 6M6.

Chad

Ambassador: 1132 New Hampshire Ave. NW,
Washington, DC, 20037, USA.

Chile

Ambassador: 56 Sparks St., Suite 816, Ottawa,
K1P 5A9.

People's Republic of China

Ambassador: 411-415 St. Andrew St., Ottawa,
K1N 5H3.

Colombia

Ambassador: Suite 112, 140 Wellington St.,
Ottawa, K1P 5A2.

Congo

Ambassador: c/o Permanent Mission of the Congo
to the United Nations, 801 Second Ave., Apt.
400, New York, NY, 10017, USA.

Costa Rica

Ambassador: 2112 S St. NW, Washington, DC,
20008, USA.

Cuba

Ambassador: 700 Echo Dr., Ottawa, K1S 1P3.

Cyprus

High Commissioner: c/o Embassy of Cyprus, 2211
R Street NW, Washington, DC, 20008, USA.

Czechoslovakia

Ambassador: 171 Clemow Ave., Ottawa, K1S 2B3.

Dahomey

Ambassador: 58 Glebe Ave., Ottawa, K1S 2C3.

Denmark

Ambassador: Suite 702, 85 Range Rd., Ottawa,
K1N 8J6.

Ecuador

Ambassador: 2535-15th St. NW, Washington, DC,
20009, USA.

Arab Republic of Egypt

Ambassador: 454 Laurier Ave. E, Ottawa,
K1N 6R3.

El Salvador

Ambassador: The Driveway Place, 350 Driveway,
Suite 101, Ottawa, K1S 3N1.

Fiji

High Commissioner: c/o Fiji Mission to the United Nations, 845 Third Avenue, 19th floor, New York, NY, 10022, USA.

Finland

Ambassador: 222 Somerset St. W, 4th floor, Ottawa, K2P 2G3.

France

Ambassador: 42 Sussex Dr., Ottawa, K1M 2C9.

Gabon

Ambassador: 4 Range Rd., Ottawa, K1N 8J5.

Federal Republic of Germany

Ambassador: 1 Waverley St., Ottawa, K2P 0T8.

Ghana

High Commissioner: 85 Range Rd., Suite 810, Ottawa, K1N 8J6.

Greece

Ambassador: Château Laurier Hotel, Suite 110, Ottawa, K1N 8S7.

Grenada

High Commissioner: 350 Driveway, Suite 605, Ottawa, K1S 3N1.

Guatemala

Ambassador: c/o Embassy of Guatemala, 2220 R Street NW, Washington, DC, 20008, USA.

Guinea

Ambassador: c/o Embassy of the Republic of Guinea, 2112 Leroy Place NW, Washington, DC, 20008, USA.

Guyana

High Commissioner: Burnside Bldg., 151 Slater St., Suite 309, Ottawa, K1P 5H3.

Haiti

Ambassador: 150 Driveway, Suite 111, Ottawa, K2P 1C7.

Holy See

Apostolic Nuncio: 724 Manor Ave., Rockcliffe Park, K1M 0E3.

Honduras

Ambassador: c/o Embassy of Honduras, 4715-16th St. NW, Washington, DC, 20011, USA.

Hungary

Ambassador: 7 Delaware Ave., Ottawa, K2P 0Z2.

Iceland

Ambassador: c/o Embassy of Iceland, 2022 Connecticut Ave. NW, Washington, DC, 20008, USA.

India

High Commissioner: 200 MacLaren St., Ottawa, K2P 0L6.

Indonesia

Ambassador: 85 Range Rd., Suites 106-111, and 208, Ottawa, K1N 8J6.

Iran

Ambassador: 85 Range Rd., Suites 307-308, Ottawa, K1N 8J6.

Iraq

Ambassador: 377 Stewart St., Ottawa, K1N 6K9.

Ireland

Ambassador: 170 Metcalfe St., Ottawa, K2P 1P3.

Israel

Ambassador: 45 Powell Ave., Ottawa, K1S 1Z9.

Italy

Ambassador: 170 Laurier Ave. W, Ottawa, K1P 5V5.

Ivory Coast

Ambassador: 9 Marlborough Ave., Ottawa, K1N 8E6.

Jamaica

High Commissioner: 85 Range Rd., Suites 203, 204, Ottawa, K1N 8J6.

Japan

Ambassador: 75 Albert St., Suite 1005, Ottawa, K1P 5E7.

Jordan

Ambassador: 100 Bronson Ave., Suite 701, Ottawa, K1R 6G8.

Kenya

High Commissioner: c/o The Permanent Mission of Kenya to the United Nations, 866 United Nations Plaza, Room 486, New York, NY, 10017, USA.

Korea

Ambassador: 151 Slater St., Suite 608, Ottawa, K1P 5H3.

Kuwait

Ambassador: c/o Embassy of Kuwait, 2940 Tilden St. NW, Washington, DC, 20008, USA.

Laos

Ambassador: c/o Embassy of Laos, 2222 S. St. NW, Washington, DC, 20008, USA.

Lebanon

Ambassador: 640 Lyon St., Ottawa, K1S 3Z5.

Lesotho

High Commissioner: 350 Sparks St., Suite 503, Ottawa, K1R 5A1.

Liberia

Ambassador: c/o Embassy of Liberia, 5201-16th St. NW, Washington, DC, 20011, USA.

Libya

Ambassador: c/o Permanent Mission of the Libyan Arab Republic to the United Nations, 866 United Nations Plaza, New York, NY, 10017, USA.

Luxembourg

Ambassador: c/o Embassy of Luxembourg, 2210 Massachusetts Ave. NW, Washington, DC, 20008, USA.

Madagascar

Ambassador: c/o Permanent Mission of the Malagasy Republic to the United Nations, 801 Second Ave., Suite 404, New York, NY, 10017, USA.

Malawi

High Commissioner: c/o Permanent Mission of the Republic of Malawi to the United Nations, 777 Third Ave., New York, NY, 10017, USA.

Malaysia

High Commissioner: 60 Boteler St., Ottawa, K1N 8Y7.

Mali

Ambassador: c/o Embassy of Mali, 2130 R Street NW, Washington, DC, 20008, USA.

Malta

High Commissioner: c/o Embassy of Malta, Chaussée de Charleroi 92, 1060 Brussels, Belgium.

Mauritania

Ambassador: c/o The Permanent Mission of the Islamic Republic of Mauritania to the United Nations, 600 Third Ave., 37th floor, New York, NY, 10016, USA.

Mauritius

High Commissioner: c/o Embassy of Mauritius, Suite 134 Van Ness Centre, 4301 Connecticut Ave. NW, Washington, DC, 20008, USA.

Mexico

Ambassador: 130 Albert St., Suite 206, Ottawa, K1P 5G4.

Mongolia

Ambassador: 7 Kensington Court, London, W8 5DL, England.

Morocco

Ambassador: 38 Range Rd., Ottawa, K1N 8J4.

Nepal

Ambassador: c/o Embassy of Nepal, 2131 Leroy Place NW, Washington, DC, 20008, USA.

Netherlands

Ambassador: 275 Slater St., Ottawa, K1P 5H9.

New Zealand

High Commissioner: 77 Metcalfe St., Suite 804, Ottawa, K1P 5L6.

Nicaragua

Ambassador: c/o Embassy of Nicaragua, 1627 New Hampshire Ave. NW, Washington, DC, 20009, USA.

Niger

Ambassador: 190 Lisgar St., Ottawa, K2P 0C4.

Nigeria

High Commissioner: Place de Ville, Tower A, 320 Queen St., Suite 2000, Ottawa, K1R 5A3.

Norway

Ambassador: 140 Wellington St., Suite 700, Victoria Bldg., Ottawa, K1P 5A2.

Oman

Ambassador: c/o Embassy of Oman, 2342 Massachusetts Ave., NW, Washington, DC, 20008, USA.

Pakistan

Ambassador: 170 Metcalfe St., Ottawa, K2P 1P3.

Panama

Ambassador: c/o Embassy of Panama, 2862 McGill Terrace NW, Washington, DC, 20008, USA.

Peru

Ambassador: 539 Island Park Dr., Ottawa, K1Y 0B6.

Philippines

Ambassador: 130 Albert St., Suite 607, Ottawa, K1P 5G4.

Poland

Ambassador: 443 Daly Ave., Ottawa, K1N 6H3.

Portugal

Ambassador: 645 Island Park Dr., Ottawa, K1Y 0C2.

Qatar

Ambassador: c/o The Permanent Mission of Qatar to the United Nations, 747 Third Ave., 22nd floor, New York, NY, 10017, USA.

Romania

Ambassador: 473-475 Wilbrod St., Ottawa, K1N 6N1.

Rwanda

Ambassador: 130 Albert St., Suite 1203, Ottawa, K1P 5G4.

Sénégal

Ambassador: 57 Marlborough Ave., Ottawa, K1N 8E8.

Sierra Leone

High Commissioner: c/o The Permanent Mission of Sierra Leone to the United Nations, 919 Third Ave., 22nd floor, New York, NY, 10022, USA.

Singapore

High Commissioner: c/o The Permanent Mission of Singapore to the United Nations, 711 Third Ave., New York, NY, 10017, USA.

Somalia

Ambassador: c/o Embassy of the Somali Democratic Republic, Suite 710, 600 New Hampshire Ave., NW, Washington, DC, USA.

South Africa

Ambassador: 15 Sussex Dr., Ottawa, K1M 1M8.

Spain

Ambassador: 124 Springfield Rd., Suites 310-312, Ottawa, K1M 2C8.

Sri Lanka

High Commissioner: 85 Range Rd., Suites 102-104, Ottawa, K1N 8J6.

Sudan

Ambassador: c/o Embassy of the Democratic Republic of the Sudan, 600 New Hampshire Ave. NW, Suite 400, Washington, DC, 20037, USA.

Swaziland

High Commissioner: c/o Embassy of the Kingdom of Swaziland, Suite 441, Van Ness Centre, 4301 Connecticut Ave. NW, Washington, DC, 20008, USA.

Sweden

Ambassador: 140 Wellington St., Suite 604, Ottawa, K1P 5A2.

Switzerland

Ambassador: 5 Marlborough Ave., Ottawa, K1N 8E6

Syria

Ambassador: c/o Permanent Mission of the Syrian Arab Republic to the United Nations, 150 E 58th Street, Suite 1500, New York, NY, 10022, USA.

Tanzania

High Commissioner: 50 Range Rd., Ottawa, K1N 8J4.

Thailand

Ambassador: 85 Range Rd., Suite 704, Ottawa, K1N 8J6.

Togo

Ambassador: c/o Embassy of the Republic of Togo, 2208 Massachusetts Ave. NW, Washington, DC, 20008, USA.

Trinidad and Tobago

High Commissioner: 75 Albert St., Suite 508, Ottawa, K1P 5R5.

Tunisia

Ambassador: 515 O'Connor St., Ottawa, K1S 3P8.

Turkey

Ambassador: 197 Wurtemberg St., Ottawa, K1N 8L9.

Uganda

High Commissioner: 170 Laurier Ave. W, Suite 601, Ottawa, K1P 5V5.

Union of Soviet Socialist Republics

Ambassador: 285 Charlotte St., Ottawa, K1N 8L5.

United States of America

Ambassador: 100 Wellington St., Ottawa, K1P 5T1.

Upper Volta

Ambassador: 48 Range Rd., Ottawa, K1N 8J4.

Uruguay

Ambassador: c/o Embassy of Uruguay, 1918 F Street NW, Washington, DC, 20006, USA.

Venezuela

Ambassador: 151 Sparks St., Suite 801, Ottawa, K1P 5E3.

Yemen Arab Republic

Ambassador: Watergate Six Hundred, Suite 860, 600, New Hampshire Ave., NW, Washington, DC, 20037, USA.

People's Democratic Republic of Yemen

Ambassador: c/o Permanent Mission of the People's Democratic Republic of Yemen, 211E 43rd St., Suite 903, New York, NY, 10017, USA.

Yugoslavia

Ambassador: 17 Blackburn Ave., Ottawa, K1N 8A2.

Republic of Zaïre

Ambassador: 18 Range Rd., Ottawa, K1N 8J3.

Zambia

High Commissioner: 2197 Riverside Dr., Suite 701, Ottawa, K1H 7X3.

Appendix 6

Books about Canada

This basic list of books about Canada, contributed by the National Library of Canada, includes a selection of publications grouped alphabetically by author and arranged under the subject classifications of The arts and the performing arts, Biography, Country and people, Economics, Government and politics, History, Literature, General reference works and Science. Titles are listed in the language in which they are published. The selection includes only books published in 1974. For additional titles, the reader should consult the lists of books in previous editions of the *Canada Year Book* or the monthly or annual editions of *Canadiana*, the national bibliography published by the National Library.

The arts and the performing arts

- Abrahamson, Una. *Crafts Canada: the useful arts*. Toronto, Clarke, Irwin, 1974. 191 p.
- Brûlé, Michel. *Pierre Perreault ou un cinéma national: essai d'analyse socio-cinématographique*. Montréal, Presses de l'Université de Montréal, 1974. 152 p.
- Dobson, Henry and Barbara Dobson. *The early furniture of Ontario and the Atlantic provinces*. Toronto, M.F. Feheley, 1974. 209 p.
- Duval, Paul. *High realism in Canada*. Toronto, Clarke, Irwin, 1974. 175 p.
- Fisette, Serge. *Potiers québécois*. Montréal, Leméac, 1974. 126 p.
- Forrestall, Tom and Alden Nowlan. *Shaped by the land*. Fredericton, Brunswick, 1974. 135 p.
- Gauthier, Raymonde. *Les tabernacles anciens du Québec des 17^e, 18^e et 19^e siècles*. Québec, Éditeur officiel du Québec, 1974. 112 p. (Civilisation du Québec: Série arts et métiers; no 13)
- Gauthier-Larouche, Georges. *Évolution de la maison rurale traditionnelle dans la région de Québec: étude ethnographique*. Québec, Presses de l'Université Laval, 1974. 321 p.
- Genêt, Nicole, Lucie Vermette et Louise Décarie-Audet. *Les objets familiers de nos ancêtres*. Montréal, Éditions de l'Homme, 1974. 303 p.
- Grosbois, Louise de, Raymonde Lamothe et Lise Nantel. *Les patenteux du Québec*. Montréal, Éditions Parti pris, 1974. 272 p. (Collection du Chien d'or; no 4)
- Hanks, Carole. *Early Ontario gravestones*. Scarborough, McGraw-Hill Ryerson, 1974. 94 p.
- Harper, J. Russell. *A people's art: primitive, naive, provincial, and folk painting in Canada*. Toronto, University of Toronto Press, 1974. 176 p.
- Ingolfsrud, Elizabeth. *All about Ontario chairs*. Photos by Rob Gordon. Toronto, House of Grant (Canada), 1974. 64 p.
- Lemieux, Germain, comp. *Chansonner franco-ontarien: 1*. Sudbury, Ont., Centre franco-ontarien de folklore, Université de Sudbury, 1974. 140 p. (Société historique du Nouvel-Ontario, Documents historiques; no 64)
- Lemieux, Irénée. *Artistes du Québec*. Québec, Éditions I. Lemieux, 1974. 263 p.
- Lessard, Michel et Gilles Vilandré. *La maison traditionnelle au Québec*. Montréal, Éditions de l'Homme, 1974. 493 p.
- L'Herbier, Benoît. *La chanson québécoise*. Montréal, Éditions de l'Homme, 1974. 190 p.
- Lord, Barry. *The history of painting in Canada: toward a people's art*. Toronto, NC Press, 1974. 253 p.
- Marsan, Jean-Claude. *Montréal en évolution: historique du développement de l'architecture de l'environnement montréalais*. Montréal, Fides, 1974. 423 p.
- Montreal Society of Architecture. *Exploring Montreal: its buildings, people and places*. Toronto, Grey de Pencier, 1974. 144 p.
- Noppen, Luc. *Notre-Dame de Québec: son architecture et son rayonnement, 1647-1922*. Québec, Éditions du Pélican, 1974. 283 p.
- Ozias Leduc: *peinture symboliste et religieuse/Ozias Leduc: symbolist and religious painting*. Par Jean-René Ostiguy. Ottawa, Galerie nationale du Canada, 1974. 224 p.
- Render, Lorne E. *The mountains and the sky*. Calgary, Glenbow-Alberta Institute, McClelland and Stewart, 1974. 223 p.
- Smith, Jean and Elizabeth Smith. *Collecting Canada's past*. Scarborough, Prentice-Hall of Canada, 1974. 220 p.
- Trudel, Jean. *L'orfèvrerie en Nouvelle-France*. Ottawa, Galerie nationale du Canada, 1974. 237 p.
- Webster, Donald Blake, ed. *The book of Canadian antiques*. Toronto, Montreal, McGraw-Hill Ryerson, 1974. 352 p.

Biography

- Aiken, Gordon H. *The backbencher: trials and tribulations of a Member of Parliament*. Toronto, McClelland and Stewart, 1974. 190 p.
- Allan, Andrew. *Andrew Allan: a self portrait*. Toronto, Macmillan of Canada, 1974. 199 p.
- Ayotte, Alfred et Victor Tremblay. *L'aventure Louis Hémon*. Montréal, Fides, 1974. 389 p. (Publications de la Société historique du Saguenay; 28) (Vies canadiennes)
- Barkhouse, Joyce C. *George Dawson: the little giant*. Vancouver, Clarke, Irwin, 1974. 138 p.
- Bassett, John M. *Elizabeth Simcoe: first lady of Upper Canada*. Don Mills, Fitzhenry and Whiteside, 1974. 59 p.
- Bird, Florence. *Anne Francis: an autobiography*. Toronto, Clarke, Irwin, 1974. 324 p.
- Bradbrook, Muriel C. *Malcolm Lowry: his art and early life: a study in transformation*. London, Cambridge University Press, 1974. 170 p.
- Bruchési, Jean. *Souvenirs à vaincre. t.I*. Montréal, Hurtubise HMH, 1974. 179 p.
- Buck, Ruth Matheson. *The doctor rode side-saddle*. Toronto, McClelland and Stewart, 1974. 175 p.
- Fryer, Mary Beacock. *Loyalist spy: the experience of Captain John Walden Meyers during the American Revolution*. Brockville, Beaumont, 1974. 254 p.
- Gagnon, Marcel-Aimé. *Olivar Asselin toujours vivant*. Montréal, Presses de l'Université du Québec, 1974. 215 p.
- Green, H. Gordon. *Don't have your baby in the dory: a biography of Myra Bennett*. Montreal, Harvest House, 1974. 146 p.
- Hacker, Carlotta. *The indomitable lady doctors*. Toronto, Clarke, Irwin, 1974. 259 p.
- McEwen, Tom. *The forge glows red: from blacksmith to revolutionary*. Toronto, Progress Books, 1974. 260 p.
- Morton, Desmond. *The Canadian general: Sir William Otter*. Toronto, Hakkert, 1974. 423 p. (Canadian War Museum. Historical publication; no. 9)
- Newman, Lena. *The John A. Macdonald album*. Montreal, Tundra Books of Montreal, 1974. 224 p.
- Parisé, Robert. *Géants de la Côte-Nord*. Québec, Éditions Garneau, 1974. 141 p.
- Pohle, Adella. *Pioneering in two worlds: the life of Carl and Adella Pohle*. Vancouver, s.n., 1974. 236 p.
- Ritchie, Charles. *The siren years: a Canadian diplomat abroad 1937-1945*. Toronto, Macmillan of Canada, 1974. 216 p.
- Rodney, William. *Joe Boyle: king of the Klondike*. Toronto, McGraw-Hill Ryerson, 1974. 368 p.
- Roy, Jean-Louis. *Édouard-Raymond Fabre: libraire et patriote canadien, 1789-1854: contre l'isolement et la sujétion*. Montréal, Hurtubise HMH, 1974. 220 p. (Les Cahiers du Québec; 17: Collection histoire et documents d'histoire)
- Smith, I. Norman. *The journal men: P.D. Ross, E. Normand Smith and Grattan O'Leary of the Ottawa Journal: three great Canadian newspapermen and the tradition they created*. Toronto, McClelland and Stewart, 1974. 191 p.
- Stewart, Roderick. *Norman Bethune*. Don Mills, Fitzhenry and Whiteside, 1974. 60 p. (The Canadians)
- Thordarson, Bruce. *Lester B. Pearson: diplomat and politician*. Toronto, Oxford University Press, 1974. 245 p. (Canadian lives)
- Un homme libre: Pierre Vadeboncoeur*. Textes de Réjean Beaudoin et al. Montréal, Leméac, 1974. 136 p. (Collection Indépendances)
- Walmsley, Lewis C. *Bishop in Honan: mission and museum in the life of William C. White*. Toronto, University of Toronto Press, 1974. 230 p.

Country and people

- Armstrong, Audrey I. *Harness in the parlour: a book of early Canadian fact and folklore*. Toronto, Musson Book, 1974. 90 p.
- Barreau du Québec. *Le barreau a 125 ans: son passé, son avenir*. Sous la direction de Jacques Boucher. Montréal, Presses de l'Université du Québec, 1974. 115 p.
- Braithwaite, Max. *Max Braithwaite's Ontario*. Vancouver, J.J. Douglas, 1974. 215 p.
- Broadfoot, Barry. *Six war years, 1939-45: memories of Canadians at home and abroad*. Toronto, Doubleday Canada, 1974. 417 p.
- Browning, Robert J. *Fisheries of the North Pacific*. Anchorage, Alaska, Northwest Pub., 1974. 408 p.
- Bruemmer, Fred. *The Arctic*. Scarborough, Prentice-Hall of Canada, 1974. (irregular pagination)

- Callaghan, Morley. *Winter*. Photographs by John de Visser. Toronto, McClelland and Stewart, 1974. 124 p.
- Canadians, Canadiens, and Québécois*. Compiled by Bruce W. Hodgins, et al. Scarborough, Prentice-Hall of Canada, 1974. 209 p. (Canada: issues and options)
- Charest, Gilles. *Le livre des sacres et blasphèmes québécois*. Montréal, L'Aurore, 1974. 123 p. (Collection Connaissance des pays québécois; no 2)
- Collie, Michael. *New Brunswick*. Toronto, Macmillan of Canada, 1974. 148 p. (The Traveller's Canada)
- Crowe, Keith J. *A history of the original peoples of northern Canada*. Montreal: Arctic Institute of North America, McGill-Queen's University Press, 1974. 226 p.
- Dagg, Anne Innis. *Canadian wildlife and man*. Toronto, McClelland and Stewart, 1974. 192 p.
- Dansereau, Dollard. *Causes célèbres: Louis Riel, Honoré Mercier, Tunnel de la rue Ontario, Adélard Delorme, Albert Nogaret, Albert Guay, Wilbert Coffin*. Montréal, Leméac, 1974. 201 p.
- Dempsey, Hugh A., ed. *Men in scarlet*. Calgary, Historical Society of Alberta, McClelland and Stewart West, 1974. 230 p.
- De Volpi, Charles P. *Nova Scotia: a pictorial record. Historical prints and illustrations of the Province of Nova Scotia, 1605-1878*. Don Mills, Longman Canada, 1974. 160 p.
- Epp, Frank. *Mennonites in Canada, 1786-1920: the history of a separate people*. Toronto, Macmillan of Canada, 1974. 480 p.
- Ferron, Madeleine. *Les Beaucerons ces insoumis, 1735-1867: petite histoire de la Beauce*. Montréal, Hurtubise HMH, 1974. 174 p.
- Fournier, Rodolphe. *Lieux et monuments historiques de l'île de Montréal*. Saint-Jean, Qué.: Éditions du Richelieu, 1974. 303 p.
- Frideres, James S. *Canada's Indians: contemporary conflicts*. Scarborough, Prentice-Hall of Canada, 1974. 209 p.
- Gagnon, Mona-Josée. *Les femmes vues par le Québec des hommes: 30 ans d'histoire des idéologies 1940-1970*. Montréal, Éditions du Jour, 1974. 159 p.
- Gohier, Jacques. *Rencontre avec le Québec: témoignages*. Les Sables-d'Olonne, France, Le Cercle d'or, 1974. 173 p. (Les Jeunes et le monde face à face)
- Grayson, Linda M. and J. Paul Grayson. *Paddles and wheels: everyday life and travel in Canada*. Toronto, Oxford University Press, 1974. 193 p.
- Grenon, Hector. *Us et coutumes du Québec*. Montréal, La Presse, 1974. 334 p. (Collection Chroniqueurs des deux mondes)
- Hardwick, Walter G. *Vancouver*. Don Mills, Collier-Macmillan Canada, 1974. 214 p. (Canadian cities series)
- Harvey, Gérard. *Marins du Saint-Laurent*. Montréal, Éditions du Jour, 1974. 310 p. (Collection Un bon bout de chemin; N-1)
- Heap, James L., comp. *Everybody's Canada: the vertical mosaic reviewed and re-examined*. Toronto, Burns and MacEachern, 1974. 178 p.
- Hill, Beth and Ray Hill. *Indian petroglyphs of the Pacific Northwest*. Saanichton, BC, Hancock House, 1974. 320 p.
- Hofmann, Charles. *Drum dance: legends, ceremonies, dances and songs of the Eskimos*. Agincourt, Gage Pub., 1974. 96 p.
- Horn, Michiel and Ronald Sabourin, comps. *Studies in Canadian social history*. Toronto, McClelland and Stewart, 1974. 480 p.
- Hughes, David and Evelyn Kallen. *The anatomy of racism: Canadian dimensions*. Montreal, Harvest House, 1974. 230 p.
- Jean, Michèle, comp. *Québécoises du 20^e siècle*. Montréal, Éditions du Jour, 1974. 303 p.
- Katz, Joseph. *Education in Canada*. Newton Abbot, Eng.; Hamden, Conn., Anchon Books, 1974. 118 p.
- Lacoursière, Jacques et Hélène-Andrée Huguet. *Québec 72-73: bilan*. Montréal, Fides, 1974. 455 p.
- Lotz, Jim and Pat Lotz. *Cape Breton Island*. Vancouver, Douglas, David and Charles, 1974. 208 p.
- Macdonald, Robert. *The owners of Eden: the life and past of the native people*. Calgary, Ballantrae, 1974. 232 p. (The Romance of Canadian history; Canada 2)
- MacLennan, Hugh. *Rivers of Canada*. Toronto, Macmillan of Canada, 1974. 270 p.
- Maloney, Elizabeth Hoskinson, comp. *Montréal*. Photographs by Harold V. Green, et al. Toronto, Hounslow, 1974. (unpaged)

- Mannion, John J. *Irish settlements in eastern Canada: a study of cultural transfer and adaptation*. Toronto, University of Toronto Press, 1974. 219 p. (University of Toronto. Dept. of Geography. Research publications; 12)
- Manuel, George and Michael Posluns. *The fourth world: an Indian reality*. Don Mills, Collier-Macmillan Canada, 1974. 278 p.
- Minton, Eric. *Ottawa: reflections of the past*. Toronto, Nelson, Foster and Scott, 1974. 95 p.
- Moir, John S. *Enduring witness: a history of the Presbyterian Church in Canada*. Don Mills, Presbyterian Publications, 1974. 311 p.
- Morton, James. *In the sea of sterile mountains: the Chinese in British Columbia*. Vancouver, J.J. Douglas, 1974. 280 p.
- Paterson, Ruth and Jack Paterson. *Cranberry Portage: frontier life at the cross-roads of the North*. Vancouver, J.J. Douglas, 1974. 171 p.
- Patterson, Robert S., John W. Chalmers and John W. Friesen, eds. *Profiles of Canadian educators*. Toronto, D.C. Heath Canada, 1974. 409 p.
- Pendakeer, V. Setty. *Canadian general aviation*. Vancouver, Versatile, 1974. 116 p.
- Perspectives on the social sciences in Canada*. Edited by Thomas H. Guinsburg and Grant L. Reuber. Toronto, University of Toronto Press, 1974. 196 p.
- Petel, Pierre. *Guide du weekend*. Montréal, La Presse, 1974. 200 p.
- Provencher, Paul. *Provencher: le dernier des coureurs de bois*. Montréal, Éditions de l'Homme, 1974. 287 p.
- Prulhière, Claude. *Québec, ou, Presqu'Amérique*. Paris, F. Maspero, 1974. 186 p. (Petite collection Maspero; 127)
- Richardson, Arthur H. *Conservation by the people: the history of the conservation movement in Ontario to 1970*. Toronto, University of Toronto Press, 1974. 154 p.
- Rioux, Marcel. *Les Québécois*. Paris, Éditions du Seuil, 1974. 188 p. (Le temps qui court; 42: civilisations)
- Robertson, Heather. *Salt of the earth*. Toronto, James, Lorimer, 1974. 224 p.
- Rouleau, Jean-Paul. *La religieuse hospitalière canadienne dans une société en transformation*. Québec, Centre de recherches religieuses, Faculté de théologie, Université Laval, 1974. 2 v.
- Schoonover, Frank E. *The edge of the wilderness: a portrait of the Canadian North*. Agincourt, Methuen, 1974. 166 p.
- Schroeder, Andreas P. and Rudy Wiebe, eds. *Stories from Pacific and Arctic Canada*. Toronto, Macmillan of Canada, 1974. 284 p.
- Schwarz, Herbert T., ed. *Tales from the smokehouse*. Edmonton, Hurtig, 1974. 102 p.
- Scott, R. Bruce. *People of the Southwest Coast of Vancouver Island: a history of the Southwest Coast*. Victoria, R.B. Scott, 1974. 138 p. (Previous publications)
- Shaffir, William. *Life in a religious community: the Lubavitcher chassidim in Montreal*. Toronto, Montreal, Holt, Rinehart and Winston of Canada, 1974. 244 p. (Cultures and communities: Community studies)
- Shipley, Nan. *Churchill: Canada's northern gateway*. Toronto, Burns and MacEachern, 1974. 124 p.
- Stewart, Brenton W. *Medicine in New Brunswick: a history of the practice of medicine in the Province of New Brunswick*. Moncton, The New Brunswick Medical Society, 1974. 413 p.
- Tardif, Guy. *Police et politique au Québec*. Montréal, L'Aurore, 1974. 493 p. (Connaissances des pays québécois; no 3)
- Toronto guidebook*. Edited by Alexander Ross. Toronto, Toronto Life, Key to Toronto, 1974. 256 p.
- Urban futures for central Canada: perspectives on forecasting urban growth and form*. Edited by Larry S. Bourne, et al. Toronto, University of Toronto Press, 1974. 367 p.
- Walker, Alan, ed. *The treasury of great Canadian humour*. Toronto, McGraw-Hill Ryerson, 1974. 413 p.
- Webster, Donald B. *The book of Canadian antiques*. Toronto, McGraw-Hill Ryerson, 1974. 352 p.
- Wise, S.F. and Douglas Fisher. *Canada's sporting heroes*. Don Mills, General Pub., 1974. 338 p.
- Zaremba, Eve, ed. *Privilege of sex: a century of Canadian women*. Toronto, Anansi, 1974. 244 p.

Economics

- Abella, Irving M., ed. *On strike: six key labour struggles in Canada, 1919-1949*. Toronto, James, Lewis and Samuel, 1974. 196 p. (Major strikes in Canadian history; 1)
- Bercuson, David Jay. *Confrontation at Winnipeg: labor, industrial relations, and the general strike*. Montreal, McGill-Queen's University Press, 1974. 227 p.

- Bliss, Michael. *A living profit: studies in the social history in Canadian Business, 1883-1911*. Toronto, McClelland and Stewart, 1974. 160 p. (The Canadian social history series)
- Canadian Women's Educational Press, ed. *Women at work: Ontario, 1850-1930*. Toronto, Canadian Women's Educational Press, 1974. 405 p.
- Copp, John Terry. *The anatomy of poverty: the condition of the working class in Montreal, 1897-1929*. Toronto, McClelland and Stewart, 1974. 192 p. (The Canadian social history series)
- The Corrective Collective (Group). *Never done: three centuries of women's work in Canada*. Toronto, Canadian Women's Educational Press, 1974. 150 p.
- Cross, Michael, comp. *The workingman in the nineteenth century*. Toronto, Oxford University Press, 1974. 316 p.
- Economics Canada: selected readings*. Edited by Burton S. Keirstead, et al. Toronto, Macmillan of Canada, 1974. 495 p.
- Fayerweather, John. *Foreign investment in Canada: projects for national policy*. Toronto, Oxford University Press, 1974. 200 p.
- Hardin, Herschel. *A nation unaware: the Canadian economic culture*. Vancouver, J.J. Douglas, 1974. 378 p.
- Hénault, Georges Maurice. *Culture et management: le cas de l'entreprise québécoise*. Montréal, McGraw-Hill Ryerson, 1974. 160 p.
- Jain, Harish, comp. *Contemporary issues in Canadian personnel administration*. Scarborough, Prentice-Hall of Canada, 1974. 176 p.
- Laxer, James. *Canada's energy crisis*. Toronto, James, Lewis and Samuel, 1974. 136 p.
- Lazarus, Morden. *Years of hard labour: an account of the Canadian workingman, his organizations and tribulations over a period of more than a hundred years*. Don Mills, Published by Co-operative Press Associates for the Ontario Federation of Labour, 1974. 116 p.
- McNaught, Kenneth and David J. Bercuson. *Winnipeg strike, 1919*. Don Mills, Longman Canada, 1974. 126 p.
- Molson, Kenneth M. *Pioneering in Canadian air transport*. Altona, Man., J. Richardson, 1974. 315 p.
- Nelles, H. Vivian. *The politics of development: forests, mines and hydro-electric power in Ontario, 1849-1941*. Toronto, Macmillan of Canada, 1974. 514 p.
- Officer, Lawrence H. and Lawrence B. Smith. *Issues in Canadian economics*. Toronto, McGraw-Hill Ryerson, 1974. 418 p.
- Pearse, Peter H., ed. *The Mackenzie energy policy*. Toronto, McClelland and Stewart, 1974. 229 p. (A Carleton contemporary)
- Ray, Arthur J. *Indians in the fur trade: their role as trappers, hunters and middlemen in the lands south-west of Hudson Bay, 1660-1870*. Toronto, University of Toronto Press, 1974. 249 p.
- Rouillard, Jacques. *Les travailleurs du coton au Québec: 1900-1915*. Montréal: Presses de l'Université du Québec, 1974. 152 p. (Histoire des travailleurs québécois; 3)
- St-Pierre, Jocelyn et Paul Bernier. *Les travailleurs québécois, 1940-1971: chronologie*. Québec, Institut supérieur des sciences humaines, Université Laval, 1974. 191 p.
- Scott, Jack. *Sweat and struggle: working class struggles in Canada*. Vancouver, New Star Books, 1974. .
- Stanford, Geoffrey H. *To serve the community: the story of Toronto's Board of Trade*. Toronto, University of Toronto Press, 1974. 270 p.
- Stewart, Walter. *Hard to swallow: why food prices keep rising, and what can be done about it*. Toronto, Macmillan of Canada, 1974. 218 p.
- Wilson, Harold B. *Democracy and the work place*. Montreal, Black Rose Books, 1974. 160 p.

Government and politics

- Allemagne, André d'. *Le R.I.N. de 1960 à 1963: étude d'un groupe de pression au Québec*. Montréal, Éditions l'Étincelle, 1974. 160 p.
- Barbeau, Alphonse. *Le droit constitutionnel canadien: lois, documents et jugements divers*. Montréal, A. Barbeau, 1974. 440 p.
- Barr, John J. *The dynasty: the rise and fall of Social Credit in Alberta*. Toronto, McClelland and Stewart, 1974. 248 p.
- Benjamin, Jacques. *Planification et politique au Québec*. Montréal, Presses de l'Université de Montréal, 1974. 142 p.

- Bilodeau, Rosario et Roger Léger. *Classes sociales et pouvoir politique au Québec: perspective historique*. Montréal, Leméac, 1974. 133 p.
- Bridle, Paul, ed. *Documents on relations between Canada and Newfoundland 1: 1935-1949: Defence, civil aviation and economic affairs*. Ottawa, Information Canada, 1974. 1446 p.
- Brun, Henri. *Le territoire du Québec: six études juridiques*. Québec, Presses de l'Université Laval, 1974. 288 p. (Droit et science politique; 6)
- Cameron, David. *Nationalism, self-determination and the Quebec question*. Toronto, Macmillan of Canada, 1974. 177 p.
- Canada and the United States*. Madison, Wis., University of Wisconsin, 1974. 429 p.
- Christian, William and Colin Campbell. *Political parties and ideologies in Canada: liberals, conservatives, socialists, nationalists*. Toronto, McGraw-Hill Ryerson, 1974. 213 p. (McGraw-Hill Ryerson series in Canadian politics)
- Continental community?: independence and integration in North America*. Edited by W. Andrew Axline, et al. Toronto, McClelland and Stewart, 1974. 302 p. (A Carleton contemporary)
- Hamelin, Marcel. *Les premières années du parlementarisme québécois, 1867-1878*. Québec, Presses de l'Université Laval, 1974. 386 p. (Université Laval. Institut d'histoire. Cahiers; 19)
- Jackson, Robert J. and Michael M. Atkinson. *The Canadian legislative system: politicians and policy making*. Toronto, Macmillan of Canada, 1974. 196 p. (Canadian controversies series)
- Litvak, Isaiah and Christopher Maule. *Cultural sovereignty: the Time and Reader's Digest case in Canada*. New York, Praeger, 1974. 140 p. (Praeger special studies in international politics and government)
- Manthorpe, Jonathan. *The power and the Tories: Ontario politics—1943 to the present*. Toronto, Macmillan of Canada, 1974. 305 p.
- March, Roman R. *The myth of Parliament*. Scarborough, Prentice-Hall of Canada, 1974. 150 p.
- Marx, Herbert. *Les grands arrêts de la jurisprudence constitutionnelle au Canada*. Montréal, Presses de l'Université de Montréal, 1974. 761 p.
- Morton, Desmond. *NDP: the dream of power*. Toronto, Hakkert, 1974. 181 p.
- Rotstein, Abraham and Gary Lax, eds. *Getting it back: a program for Canadian independence*. Toronto, Clarke, Irwin, 1974. 324 p.
- Schwartz, Mildred A. *Politics and territory: the sociology of regional persistence in Canada*. Montreal, McGill-Queen's University Press, 1974. 344 p.
- Stairs, Denis. *The diplomacy of constraint: Canada, the Korean War, and the United States*. Toronto, University of Toronto Press, 1974. 373 p.
- Taylor, Charles. *Snow-job: Canada, the United States and Vietnam: 1954 to 1973*. Toronto, Anansi, 1974. 209 p.
- Tooke, Moyra. *Politics are people: an illustrated guide to Canadian elections*. Toronto, Griffin House, 1974. 73 p.
- Turi, Giuseppe, comp. *Les problèmes culturels du Québec*. Montréal, La Presse, 1974. 127 p.
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Appendix 7

Government information services

Information Canada* was established in April 1970 to act as a central source of public information on federal government policies, programs and services; to co-ordinate federal information programs involving more than one portfolio and to initiate special programs where the public need is clear but the responsibility does not fall under the jurisdiction of any one portfolio; to provide professional resource assistance to help other federal agencies improve the quality and effectiveness of their information work; and to market and distribute federal publications.

The agency now has 11 inquiry centres across Canada, one in a major city in every province, in addition to the national centre in Ottawa. Information Canada also makes special efforts to reach citizens beyond large urban areas by using mobile information officers and by establishing communication networks with community information centres and libraries. Some of these centres have already been linked to the nearest Information Canada inquiry centre via telephone and telex and have access to a complete bank of federal information.

Hundreds of government publications are available through Information Canada's six bookstores, through central and regional mail order service, and through any of Information Canada's "authorized agents", commercial booksellers authorized to carry government material. Information Canada has over 100 such agents, and estimates that there will be 200 by 1975-76.

Information Canada Expositions designs and mounts domestic and international exhibits on behalf of client federal departments. It is also responsible for co-ordinating the federal presence at exhibits where several departments are participating. To fulfil this responsibility, Expositions is experimenting with the new "Umbrella Concept", as developed for the "Salute to Aviation" exhibit in Calgary and Toronto.

The Photothèque, also part of Audio-Visual/Expositions, has a library of over 300,000 photographs on Canadian subjects and offers a photographic advisory service to assist other government departments. It also arranges to cover photographic assignments for departments upon request.

Federal government information services are not centralized in Information Canada but act independently. They are at the service of the public to answer inquiries about their specific responsibilities, while Information Canada acts as a central contact point.

Statistics Canada, established in 1918 as the Dominion Bureau of Statistics, is Canada's central statistical agency and the country's main collector and publisher of information about Canadian economic and social life. The agency, given its present name in 1971, has been a separate department of government since 1965 and reports to Parliament through the Minister of Industry, Trade and Commerce.

One of Statistics Canada's key jobs is conducting the Census of Canada at five- and ten-year intervals; the latest ten-year census was in 1971 and the next five-year census will be in 1976. The bureau also undertakes a comprehensive Census of Agriculture at the same time as the general census and regularly surveys the social and economic change under more than 20 broad subject-matter headings such as the monthly labour force and consumer prices surveys.

The growth of Statistics Canada, both in personnel and in the complexity of statistical activity, has paralleled Canada's development as a modern industrial state. The agency's staff, which includes the largest single body of social scientists in one organization in Canada, numbered about 5,500 employees at the end of 1974. Several hundred additional persons are employed part-time on such projects as special surveys and censuses.

Statistical collection by the bureau covers every area of Canada and ranges from national assessments such as the national accounts to census detail. The information produced describes quantitatively Canada's economic and social environment and is used as an aid to decision-making and research. The public sector uses the information for the development of social and economic policies and the private sector for decisions in marketing and the establishment of branch plants and retail outlets.

Most Statistics Canada information is made available to the public through publications but for users requiring information in a more sophisticated form there is an increasing output on micro-film, computer tapes and special tabulations. At the most recent count, more than 2,500 publications were issued. Of these, some appear monthly or more frequently, some quarterly, some annually, and others every two or three years. The publications flowing from the national censuses include 278 for 1961, 122 for 1966 and more than 300 based on the 1971 Census. Some general publications are issued occasionally and include special studies and manuals. Statistical reports are published in English and French. About 1.3 million copies of Statistics Canada publications are issued yearly on a subscription basis.

*In December 1975 the federal government announced that Information Canada would be disbanded at the end of the fiscal year (March 31, 1976). However, it is expected that the Expositions and Publishing branches will continue to operate under another department.

The publications program includes statistical information from each subject area most commonly used. Special tabulations are issued in response to requests for more detail.

In addition to the publications program, there is considerable distribution of statistical information through newspapers, magazines, trade journals, trade associations, radio and television broadcasts. Much of Statistics Canada material is used in a wide range of reference publications such as year books and encyclopedias and is incorporated into research studies, books, learned journals and in a great variety of other public and private documents.

Geocoding, known formally as the Geographically Referenced Data Storage and Retrieval System (GRDSR), is one example of the sophisticated tools the bureau uses for processing data and providing statistical information. Through GRDSR, certain statistical information from the census can now be quickly and inexpensively obtained about small areas in major cities.

Another example of Statistics Canada's capability for the storage and speedy processing of information is the Canadian Socio-economic Information Management System (CANSIM). CANSIM stores and updates hundreds of series of information on such topics as prices, industrial production, trade, and national accounts. Most series cover statistics for several years. Information tailored to user requirements is provided on computer tapes or in table form.

The principal vehicle for informing the public about the bureau's output is the free catalogue of publications, issued annually. It can be obtained by writing to Publications Distribution, Statistics Canada, Ottawa K1A 0T6. The catalogue lists and describes all publications, grouped by subject areas. An index lists several thousand entries arranged in alphabetical order and cross-referenced where necessary to show several publications in which information on a given subject may be found.

Statistics Canada publications may be obtained from the bureau headquarters, by using the order form supplied with the catalogue, and through regional offices at St. John's, Halifax, Montreal, Ottawa, Toronto, Winnipeg, Regina, Edmonton and Vancouver. Frequently-used publications are stocked in Information Canada bookstores in principal cities. Major public and university libraries, provincial libraries and the National Library at Ottawa have Statistics Canada publications available for reference and the Statistics Canada library in Ottawa has all publications issued since the bureau was established.

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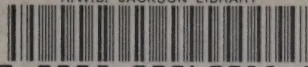
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